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THE HEALTH MAGAZINE
OF THE AMERICAN MEDICAL ASSOCIATION

HYGEIA

APRIL
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WOMEN AT WORK
A medical report on women in industry

SOVIET MEDICINE
By Bernard Koten

FARM ACCIDENTS
By Mildred D. Shelley

HEALTH IN THE TROPICS
By Capt. Lucius W. Johnson, M.D.

MARITAL FRUSTRATION
By Ernest R. Groves

MENTAL ILLNESS
By John Eisele Davis

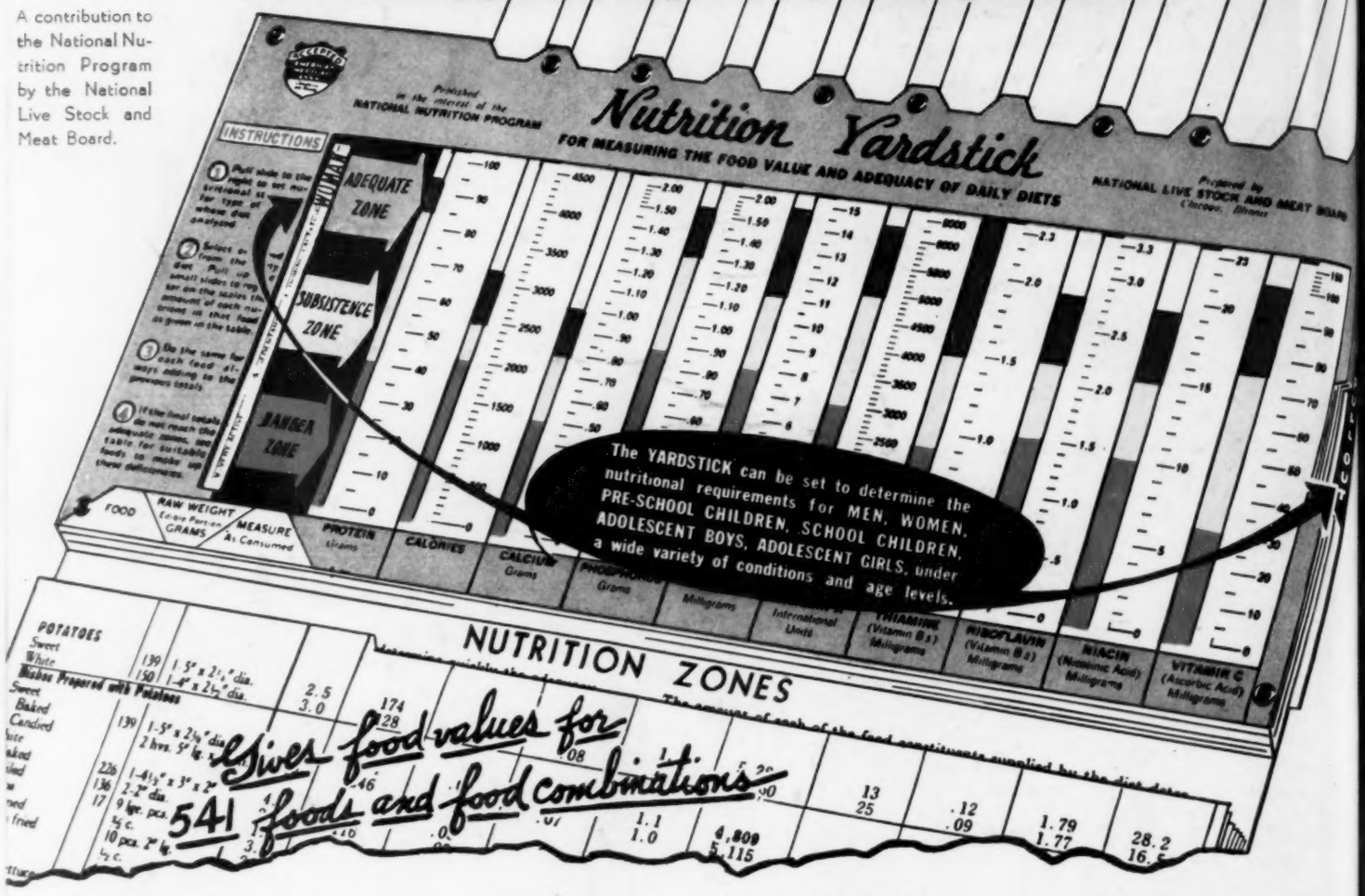
FIT TO FIGHT
By Will O'Neil

A GRAPHIC CALCULATOR

FOR MEASURING FOOD VALUE AND ADEQUACY OF DAILY DIET

Nutrition Yardstick

A contribution to the National Nutrition Program by the National Live Stock and Meat Board.


Nutrition Yardstick
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SUBSISTENCE ZONE
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The price of the YARDSTICK is $1.00. It is now available to physicians, dentists, dietitians, nurses, home economists, health teachers and other health workers at a special price of 50 cents.

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DEPARTMENT OF NUTRITION
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JOHN HUNTER 1728-1793

Established surgery as a branch of scientific medicine

hygeia

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy, submitted. All rights reserved.

nothing wrong with his posture

Just look at his straight, strong back! When he was a few weeks old, his mother started him on cod liver oil, and he's been getting it *ever since*. Vitamin D regularly helps babies build straight legs, strong backs, well-shaped heads.

A smile is born!

You picture her grown up, her smile as enchanting as now, framing a set of beautiful teeth. Now is the time to help pave the way for them. Squibb Cod Liver Oil given regularly *every day* supplies extra Vitamin D which is needed to build baby teeth and to prepare for a sound set of permanent teeth later on.

outgrowing her cozy crib

Long before fourteen months, baby is exploring life beyond her crib. While she's growing up in other ways, remember that head, chest, back, legs are growing, too! To help build straight, strong bones she needs Vitamin D. Give Squibb Cod Liver Oil.

SQUIBB
COD LIVER OIL

MAKE YOUR PENNIES GO FURTHER... With Squibb Cod Liver Oil, you are assured full value for your money. It provides twice as many Vitamin A and D units as cod liver oil which just meets U. S. Pharmacopeia requirements. Give your baby Squibb's.

"The Adcomber"

looks at Hygeia ads

Have you seen the new Nutrition Yardsticks? They reduce diet computations to simple—not black-and-white—but red, yellow and blue. Show ADEQUATE, SUBSISTENCE and DANGER zones. Mighty useful! —and, note the special low price to health teachers, physicians and other health workers, inside front cover.

Now starring in Clapp's Baby Foods: the "splendidest" spinach, most glamorous pig (bacon), and a galaxy of others from farm and garden—each star bringing with her a full complement of the most talked-of vitamins and coveted minerals! Your Clapp-fed baby will applaud his favorites to the rafters . . . And the doctor—DITTO! (Page 303.)

WARNING: Ticklish little allergies still go masquerading as "spring colds." That gale of sneezes may be just your peculiar reaction to the well-known "breath of spring." The remedy—for many allergic folks—MARCELLE hypo-allergenic COSMETICS! Note the sample offer, p. 246.

"Wad some power the giftie gie us"—but in spite of Bobbie Burns, we still can't "see oursel's as others see us." So we, the scant-haired, often fail to realize how *much* a well-made hairpiece would improve our appearance! "Well-made" like the hairpiece shown on page 318.

Milk for calcium plus *molasses for iron* equals *Brer Rabbit Milk Shake—which is another name of Youngsters' Delight! Then, too, there's good news and good nourishment in Brer Rabbit molasses cookies. . . . Yours FOR FREE —116 recipes, offered, page 288.*

So easy to overlook! So disastrous to eyesight and disposition! So simple to correct—DUST on your light bulbs, in the shades. There's 25 to 30 per cent more light in those lamps, and it's *yours for the washing.* (Page 279.) . . . Moral: Don't "hide your light under a bushel"—of DIRT.

NOTE to the Ways and Means Committee on Wartime Meals at Your House —You can always count on Frank's Jumbo Peanut Butter to fill any awkward gaps in the menu. Combines luscious taste with food energy! (Page 283.)

Here's relief from the raw, skin-parching winds of spring—Nivea Creme, Nivea Skin Oil, Superfatted Basis Soap. Use one or all as a "stitch-in-time" measure, or to repair damage already done . . . page 313.

IF a straight line is the shortest distance between two points—then THUM is the sensible remedy for your youngster's thumb-sucking and nail-biting. . . . *What do we mean?* Just this: why bother with a roundabout system of threats and promises when THUM does the work promptly? Page 311.

THE ADCOMBER

Who's Who

IN

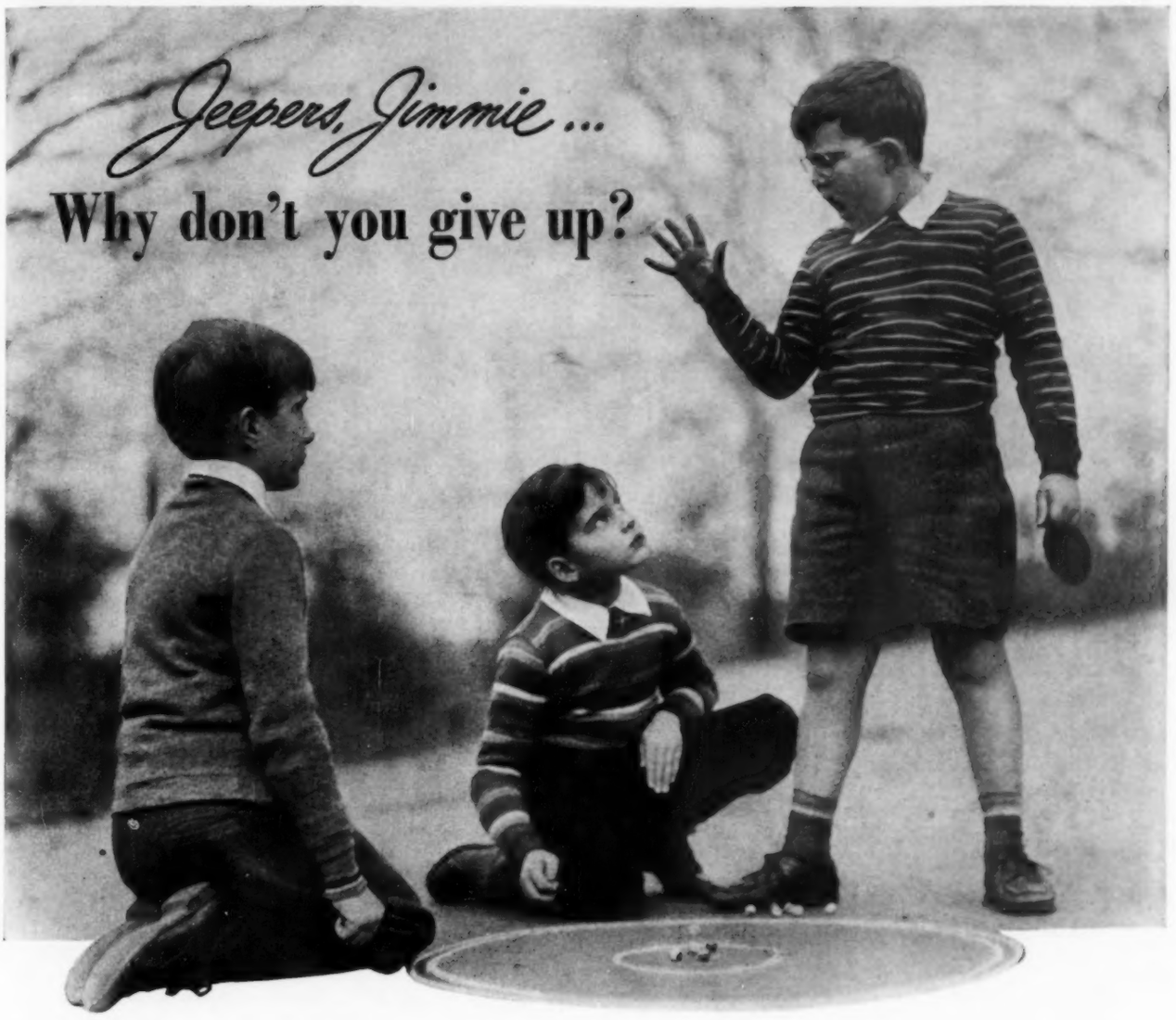
HYGEIA

ERNEST RUTHERFORD GROVES could easily be described as "the man who wrote the book on marriage and family life," and—among sociologists, at any rate, there wouldn't be any need to ask, "Which book?" He's written most of them. Starting with "Personality and Social Adjustment" in 1923, Professor Groves has written at least one book a year ever since, to the total of some twenty-six or twenty-seven volumes, not to mention the numerous pamphlets, monographs, reports and magazine articles which he turns out, so to speak, when no one is looking. Many of Professor Groves' books were written in collaboration with his wife, Gladys Hoagland Groves, a family counselor in her own right; a few are the result of joint effort with other sociologists. In 1928, for example, Professor Groves wrote "Introduction to Sociology" and "The Marriage Crisis" by himself and collaborated with William F. Ogburn, professor of sociology at the University of Chicago, on "American Marriage and Family Relations." One of his most recent books, "Sex Fulfillment in Marriage," was written jointly by Professor Groves and his wife and their daughter Catherine.

Writing books, however, is not Professor Groves' only occupation; as a matter of fact, it isn't even his chief one. First and foremost, he's an educator—with a long and distinguished career in teaching. Professor Groves was graduated from Yale Divinity School in 1901 and from Dartmouth College in 1903. His first appointment was as professor of sociology at New Hampshire University, where he stayed for four years. After a two year turn as an English instructor at Dartmouth, he returned to New Hampshire University in 1907, teaching sociology and serving as dean of the liberal arts college until 1920. From 1920 to 1927 he taught sociology at Boston University, introducing there the first known college credit course in preparation for family life. Since 1927, he has been at the University of North Carolina at Chapel Hill, N. C., as professor of sociology and director of the Institute for Research in Social Science. In addition to his undergraduate courses in preparation for marriage at North Carolina and nearby Duke University, Professor Groves has organized a three year program of graduate instruction for those who plan to teach preparation for marriage or marriage counseling, and an annual conference on conservation of marriage and the family attended by scientific investigators and practical workers interested in the methodology of marriage instruction.

Perhaps the best idea of what Professor Groves teaches his students, and teaches his teachers to teach *their* students, can be gained from a list of his books. His most widely known and quoted work is the textbook for his course, which is called, reasonably, "Marriage," and which is now in its second edition. Among other titles in the Groves list are: "Wholesome Childhood," "Social Problems of the Family," "Parents and Children," "Wholesome Parenthood," "Sex in Marriage," "Sex in Childhood," "Understanding Yourself," "Preparation for Marriage," "The American Woman," "The Family and Its

(Continued on page 249)



No tragedy, you say, that Jimmie isn't good at marbles? But, it's a tragedy to Jimmie. He'll be in tears as soon as he's away from the boys. And you can't blame him.

Jimmie just can't make it out. Why isn't he like the other kids? Why can't he play marbles, or ball, as well as the rest? Why is he always second best at school? His folks think he's smart!

Jimmie has no way of knowing what his trouble is. How could he? He's never been any different.

He doesn't know that his folks are to blame . . . that they're guilty of an unpardonable neglect. Jimmie *can't see properly* . . . and a professional examination would show Jimmie's faulty eyesight and start him on the road to a happy, normal childhood.

How about *your* child's eyes? Have they been examined lately? Don't gamble with anything so precious as your child's right to normal living. Take your child for that examination right away . . . and *know* that you haven't neglected something so vital to his welfare.

WHAT ARE SOFT-LITE LENSES?

Soft-Lite Lenses, made by Bausch & Lomb, are scientifically designed to control the amount of light that reaches the eye, without altering color or visual sharpness. They neutralize glare, absorb excess light, protect eyes against eyestrain and fatigue. Soft-Lite Lenses are ground to individual prescriptions. They are prescribed for children as well as adults.

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ASK YOUR DOCTOR . . .

to determine the cause of your sensitivity. Perhaps there is some substance in the cosmetics you are now using which is the disturbing factor.

You may not have just another "spring cold" . . . you may be allergic. Let your doctor judge the suitability in your case of Marcelle Cosmetics, recommended especially for the allergic individual.

FIVE SAMPLES

Send only one dime and your name for samples of Marcelle hypo-allergenic Cleansing Cold Cream, Skin Lubricating Cream, Face Powder, Rouge, and Lipstick.

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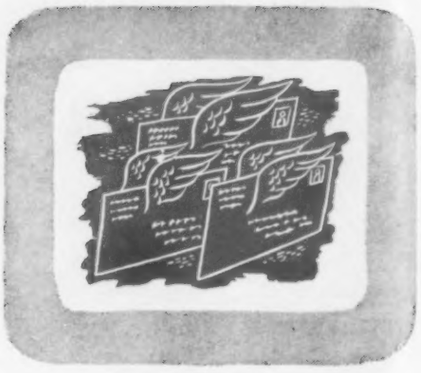
Please send me the five sample beauty aids. I enclose 10c.

Blonde..... Brunette..... Auburn.....

NAME.....H-4-43

ADDRESS.....

LETTERS FROM *Readers*



Home Nursing

To the Editor:

I should like to make a plea for more articles pertaining to home nursing in HYGEIA. We nurses scan its pages each month for charts and articles which we can use in our training.

EDITH MACK

Minneapolis, Minn.

One of Many

To the Editor:

Just a note to congratulate HYGEIA and Miss Tyler on the excellent article, "Ventures in Dentures," in the February issue. This is one of the best articles on this subject for the laity that has ever come to our attention.

LON W. MORREY, D.D.S.
Director

Bureau of Public Relations,
American Dental Association,
Chicago, Ill.

He's in the Navy Now

To the Editor:

I have corresponded with you many times before I enlisted in the Navy. Would like to know if you still answer questions through the mail, as I have many things I'd like to know. I still read HYGEIA here at the library when I get the chance. It's as swell as ever.

Where does vitamin K get its name? Thank you.

HARRY KRAMER

Naval Hospital Corps School,
Great Lakes, Ill.

HYGEIA *still answers questions—thousands of them—by mail. For information about vitamin K, see "Saving Life at Its Source," on page 254 of this issue.*—ED.

Rules for the Hospital

To the Editor:

Let me compliment you upon your uniformly understandable articles on all subjects. I have gained much from them.

I agree with all the rules for hospital patients (*see "Be a Good Patient!" by Arthur P. Trewhella, February 1943*—ED.), but I venture to suggest a few for the hospital regarding the admitting office, to wit:

Do not use a young girl. Middle aged people resent her.

Do not place her in the public entry where every one can hear what she asks you.

Select a woman of 30 or over—one who has good personality and charm, preferably a married woman.

Do not select one who has no memory and who comes rushing at you, pad and pencil in hand, to ask your name for the twentieth time. Such a person is wholly unfit for the position. At least the public thinks so, and what the public thinks about the receptionist is to a large extent what it feels about the hospital. The management gets the blame.

Do not have the receptionist also operating a switchboard and, therefore, forced to take down your answers between pulling and pushing plugs.

Do not be constantly changing receptionists.

I know a hospital that has lost a lot of patients by complete disregard of these matters. After so long a time the people form the

(Continued on page 249)

DON'T WAIT FOR A WAR EPIDEMIC

Ask your physician to bring your child's immunization UP-TO-DATE . . . NOW!

Overcrowded schoolrooms, street-cars and stores . . . the influx of war workers from other parts of the country . . . these and many other war conditions *increase* the likelihood of *your child* being exposed to serious contagious disease! Have you given him the protection he has a right to expect from you?

Not unless his immunization is *up-to-date*—for his age!

Too many mothers postpone this protection long past the time it should be given. This dangerous mistake was strikingly brought out in a recent nation-wide Roper Survey. Others mistakenly believe that the immunization their children received in infancy is effective *forever;* the fact is, *repeated* immunizations are necessary for many diseases.

Ask your physician today to bring your child's protection *up-to-date*. Ask him, too, for a helpful Immunization Record Card for each member of the family. This vital record-and-reminder card tells you for *what* your child has been protected, and *when* . . . and serves as an automatic reminder to re-check with your physician at the proper time in the future.

Don't wait till your child is exposed!

IF YOUR CHILD IS—

A baby . . .

his first vaccination for Smallpox should be given when he's 3 months to a year old. If this hasn't been done, *do it now!* More cases of Smallpox are reported in the U. S. than in any other country in the world except India! For Diphtheria, too, immunization should be given in infancy . . . between the ages of 9 and 18 months.

Most of the *deaths* from Diphtheria occur among *little* children. For Whooping Cough (another killing disease) medical opinion advises that immunization, when recommended by the physician, be between 6 and 9 months.

At 18 months to 2 years . . .

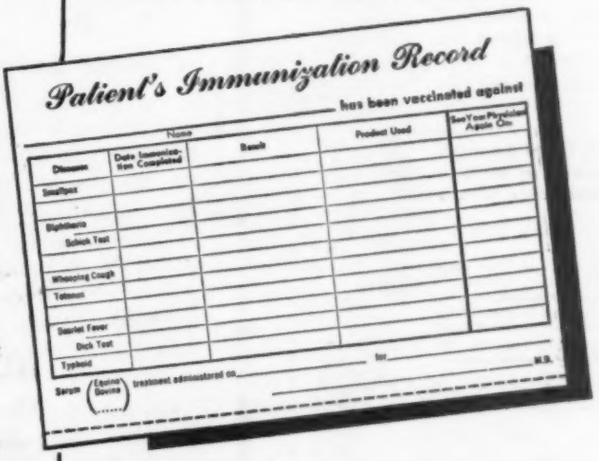
your physician may also advise immunization against Scarlet Fever, Typhoid, or Tetanus. Ask him!

At 6 or over . . .

your child should be re-vaccinated against Smallpox and Schick-tested to see if he's immune to Diphtheria. If you haven't done this, *do it now!*

At around 12 . . .

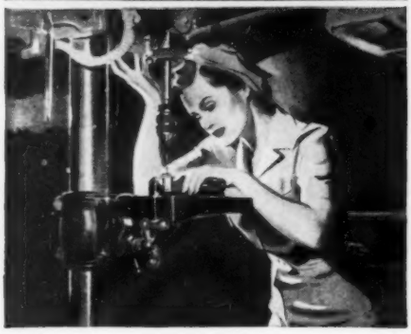
a child should again be re-vaccinated and Schick-tested. The only protected child is the child whose immunization is kept effective and *up-to-date* for his age!



THESE CARDS are made available to physicians by Sharp & Dohme, Philadelphia, Makers of Pharmaceuticals and Biologicals, as part of their endeavor to aid in the prevention of communicable disease.

Sharp & Dohme PHILADELPHIA

IS YOUR BACK EQUAL TO YOUR WAR JOB?



DON'T let your back get you down! Get yourself some help . . . the kind of help a *Camp Scientific Support* can give you. By improving your posture, a Camp Support helps you feel more fit. Do more work with less fatigue.

When your figure sags, you put *extra* strain on hard-working muscles. Your back—and even your legs—begin to ache. You feel tired all over.

But a *Camp Support* is so scientifically designed that it is often recommended by doctors. It actually helps *correct* figure faults instead of merely fitting over them. Why don't you give yourself this wonderful "lift" . . . and go about your important work with renewed energy and vigor!

CONTROL WITHOUT PRESSURE

1. A Camp Support is scientifically designed to support and steady pelvis, the base of the body.

2. A patented adjustment feature regulates the degree of support.

3. Smooth natural silhouette. *No sacrifice of comfort.*

4. Good body balance lessens leg muscle strain, *helps avoid fatigue.*

Priced from $5

Look for this sign in store windows, in corset departments. It means that a Camp-trained fitter is in attendance and that Camp Scientific Supports are available. Remember—these supports are never sold by door-to-door canvassers.

S. H. CAMP AND COMPANY, JACKSON, MICHIGAN
World's largest manufacturers of scientific supports.
New York; Chicago; Windsor, Ontario; London, Eng.

Coming in HYGEIA

THE OLDER WORKER

By Anton J. Carlson

Physiologic age does not necessarily reflect chronologic age, and skill and experience may readily compensate for lack of physical vigor in the worker past 50 or 60 years old. These and other forgotten or neglected facts about the working capacity of the older worker demand consideration now that war has compelled attention to the conservation of manpower. The University of Chicago's famed physiologist gives the facts and interprets them for HYGEIA readers in next month's article, the second in a series on industrial health subjects.

THE OVERSOLICITOUS MOTHER

By Frank Howard Richardson

"Find out what Johnny is doing and tell him to stop!" is now thoroughly discredited as a system of disciplining children. Yet many pediatricians report that "Find out what the mother is doing and tell her to do something else!" is still sound practice in a surprisingly large number of cases. The trouble is, Dr. Richardson explains, that most mothers try to do too much. Stop trying to make your children perfect, he tells mothers; relax and enjoy them. Just live with them, he says, and they—and you—will be better off. Dr. Richardson's sensible philosophy is expressed in an article in the April HYGEIA which should become gospel for sensible parents.

TIRED EYES

By Conrad Berens

Inevitably, the increased physical and emotional stress of wartime living and the rapid tempo of modern life have added to the incidence of eyestrain, whose symptoms may range from headache and dizziness to general fatigue and blurred or double vision. In the presence of these or any of the other symptoms which may indicate eye fatigue, the worker today owes it to himself and to the nation to have an examination and, if necessary, to wear corrective glasses. Dr. Berens' article in HYGEIA for April tells how eyestrain may be detected and what is involved in its treatment.

ALSO COMING IN HYGEIA

"Factors in Nutrition," by Amalia Lautz, who discusses the factors other than food which affect our nutritional status; "The Food We Eat, III," by Miriam Zeller Gross, a review of the food sources of dietary essentials; "Flying Doctors," by A. C. H. Purthrey, the story of how the medical corps keeps the airmen in good flying condition; other articles on child care, personal hygiene, tuberculosis, public health, war medicine and health in industry.

LETTERS FROM READERS

(Continued from page 246)

idea that the doctors don't care whether you come or not.

With regard to objecting to being wheeled to the operating room, the only objection I have heard pertains to a hospital so arranged that you are wheeled through the street level hall, not far from the front door and past all the people in the hall and some of the reception rooms. This strikes me as bad planning.

ARTHUR F. KINGDON

Bluefield, W. Va.

Sinuses

To the Editor:

In the last issue of HYGEIA you had an excellent article on the sinuses together with a diagram (*"Your Sinuses and Your Health," by Lewis J. Silvers, February 1943*—ED.). May I suggest that you get Dr. Silvers to write another article somewhat more in detail? Most of us are greatly concerned with this subject.

In the diagram I note a point that causes me to inquire further. In that busy artery of traffic between the head and shoulders there is a junction point. Just in front of that point there is shown what looks to be a pocket. Can you refer me to previous drawings or diagrams in HYGEIA which will show this pocket in detail? Also, can you refer me to any articles that dwell on it and its functions?

I have often suspected such a pocket due to the lodging there of mealy food such as peanuts and soybeans. For a time I was somewhat concerned about it, but a throat specialist looked me over and seemed not to be disturbed by what he saw down there!

CARL A. LINDQUIST

Brooklyn, N. Y.

Mr. Lindquist's letter was referred to Dr. Silvers, who has replied as follows—ED.:

What you undoubtedly refer to when you mention the pocket in which coarse food may lodge is a depression in the nasopharynx. This sulcus or diverticulum as we medicos call it is often responsible for discomfort in swallowing mealy or granular food.

There is also a fold between the back of the tongue and the epiglottis which causes similar trouble in a small percentage of people. This glosso-epiglottis fold or sulcus permits granular, partially chewed food to become deposited during the act of swallowing.

Unless there be special pathology associated with these mechanical flaws in our anatomy, there is no cause for worry. A copious draught of water after the food is thoroughly chewed and swallowed will usually suffice to correct this apparent anomaly of Mother Nature.

LEWIS J. SILVERS, M.D.

New York, N. Y.

WHO'S WHO IN HYGEIA

(Continued from page 244)

Social Functions" and "Christianity and the Family."

Commenting on Professor Groves' new book, "Sex Fulfillment in Marriage," when it first appeared last year, a physician with wide experience in clinical practice and also in the field of health education said: "It should be compulsory reading for every man and woman in America."

The same might well be said of "Marital Frustration in Women," Professor Groves' illuminating article on page 271 of this issue of HYGEIA.

EDWIN M. COLE, M.D., is director of the language clinic at the Massachusetts General Hospital in Boston, a clinic organized for the study and treatment of all kinds of language problems, including speech disorders, reading disabilities and problems in learning. He is also engaged in private practice in Boston, specializing in neurology and psychiatry. Dr. Cole was graduated from Harvard University Medical School in 1930 and served internships at the Hartford and Massachusetts General hospitals. Today, Dr. Cole teaches neurology to Harvard medical students and is a member of the staff in neurology at the hospital. His article in this issue of HYGEIA, "Language Problems in children," on page 301, deals with the basic causes of language difficulty and outlines practical steps in its correction.

Among the other authors in HYGEIA this month are: FRANK HOWARD RICHARDSON, M.D., author of numerous books and magazine articles on maternal and child care; CHARLES L. SAWIN, Indianapolis business man, swimming coach and writer; MILDRED D. SHELLEY, for many years editor of a public health department bulletin; JOHN EISELE DAVIS, writer and research worker in mental hygiene and occupational therapy; FRANK L. BEALS, assistant superintendent of schools in Chicago; GREER WILLIAMS, former science editor of the Chicago *Sun* who is now a U. S. ski trooper; LUCIUS W. JOHNSON, M.D., Captain in the Medical Corps, U. S. Navy; and the late JOHN OLIVER McREYNOLDS, M.D., ophthalmologist of Dallas, Texas, and past vice president of the American Medical Association.

CURRENT TRENDS IN MEDICAL SERVICE

An Editorial

By MORRIS FISHBEIN

THE AMERICAN medical profession and the people they serve have initiated many experiments in wider distribution of the services of the medical profession and the hospitals. In many areas where there is concentration of the population due to war industries, the Federal Housing Administration has established great housing projects with which are associated prepayment plans for the distribution of medical service, dispensaries, and clinics in which individual physicians or groups provide medical care. Some of the state medical service plans, such as that of California, have contracted with federal agencies to supply medical service to the workers who live in such projects. All this progress has been made without regimenting the people, the physicians, or the hospitals of the United States in a politically controlled bureaucracy.

The principle of social security which Bismarck introduced into Germany has been elaborated throughout the world. Some economists visualize a world in which every human being will be protected by his government against all the ordinary hazards of human existence. Already plans for security provide in some places for unemployment, old age, accident, sickness, death, marriage, birth, war, children, orphans, and even fire, flood and tornado. Obviously, there must be profound effects on the psychology of mankind when there is removed any fear of want, whether or not the human being works. What becomes of human initiative under such circumstances? Is there yet available sufficient evidence to warrant some of the proposals toward security that are now being advanced? Do we know that the grafting on the American democracy of such systems will tend toward maintenance or destruction of that democracy?

In the United States, we are evolving gradually systems particularly suited to the varying conditions which prevail in different parts of our country. Any attempt to provide for the United States as a whole must take into account the difference in the conditions that prevail in an urban community like New York as contrasted with an agricultural state like Iowa, of an industrial area like Connecticut as contrasted with a desert area like New Mexico, of a community almost wholly white like that of Minnesota as contrasted with the proportion of Negro population in the state of Mississippi, of the per capita wealth of Massachusetts as compared with the per capita poverty of southern Georgia. These are some of the factors which have concerned those who are particularly involved in the provision of medical care.

Of greatest significance has been the tremendous development that has occurred in the field of industrial medicine. Obviously the prevention of industrial disease is far more important than the treatment of either disease or disability occurring in industry. The growth of industrial medicine as a specialty has gradually drawn into that service many hundreds of

additional physicians. Obviously the decision may yet have to be made as to whether or not the provision of medical services to the employee and his family is to be considered primarily a function of the industry, of the local community, of the state, or of the national government. Certainly it is already apparent that the grouping of human beings in health as a means of securing advance provision for the meeting of the hazards of illness is a permanent factor in our civilization.

Correlated with the changes in social organization for the securing of medical care is the question of organization of the services of physicians for the supplying of such care. There are those who insist that medicine can be properly supplied only when all physicians are organized into groups providing the special knowledge available in each of the medical specialties and when the services of the general practitioner will no longer be the chief factor in the supply of medical care. The growth of the hospitals has tended more and more toward the grouping of physicians with the hospital as the center of medical service. Nevertheless, the services of the individual physician, capable as is the general practitioner of meeting almost any ordinary medical contingency, must continue to be the basis of medical service in those sections of any nation which are still representative of the frontier. There are areas so sparsely populated that even the services of a physician cannot always be available. Fortunately the growth of transport by motor car, train, and airplane makes any human being reasonably near to a hospital for conditions of emergency type.

Thus the services of modern medicine are greatly modified by technical advances. The United States is fortunate in adapting itself to those changes gradually so that the factor of individual responsibility continues to be the basis of our living. Certainly the degradation of the individual apparent in the totalitarian governments should stand as a warning in every situation in which the possibility of removal from the individual of any of his rights or responsibilities is involved.

One of the difficulties of the situation in guiding the trend of medical service in the United States is the political factor; in fact, there is insistence on the part of certain agencies for complete governmental control of all of medical practice and that the people, the congress, or the administration make a positive choice between politically or privately controlled plans. The decision as to whether or not the financial aspects of any system are dominated by governmental or privately controlled agencies is a decision of exceeding importance. However, most important in the ultimate for the patient himself is the decision as to whether or not the medical standards will be established and maintained by the medical profession or by some other agency. Whenever the standards of medical service have been entrusted to politicians or even statesmen, untrained in medical science and practice, and, indeed, whenever financial management has encroached on the control of medical service, the quality of the service deteriorates and the sick suffer.

Fundamental to all security programs is the ultimate effect of the program on the character of the people concerned. In a recent psychologic consideration entitled "Our Age of Unreason," Dr. Franz Alexander has traced the outbreak of this war to that trend in human existence which has made of every German citizen, through his social security system, a slave of his dictator. In a review of that work in *Harper's Magazine*, Bernard DeVoto says, "The terrible truth is that the Nazi plan, however intolerable to free and adult minds, is a workable solution of the problem of living in a world necessarily made international by technology. . . . Throughout modern history the Germans have been a people insecure and scared, hence arrogant and aggressive, driven to require support from totalitarian governments, finding security in infantile dependence on state and leaders, relieved by dictators of the terrifying duty of being adult, therefore, victims of primitive emotions and preyed on by primitive guilts, hates, and terrors which become tolerable to them only when directed against their neighbors."

As Dr. Franz Alexander points out, the war is being fought basically "to settle the question whether we shall continue to live in a society which values the individual . . . or in a highly mechanically organized state conceived according to the example of the insect societies."

And as Mr. DeVoto continues, "If there can be no wholly satisfactory reconciliation between security and freedom—between the need to remain a child and the need to be adult—at least those who give up freedom will get some satisfaction from the psychological security which the insect state can provide."

Ewing Galloway

The Eyes

By JOHN O. McREYNOLDS

WORK AND PLAY affect every human being, and doctors are constantly consulted about their bearing on the organ of vision and its functioning and preservation. The approach to this subject must take into consideration the necessities, desires and conditions of present day manners of thought and action. Each person has his own special capacity for work and play, and we cannot all be required to follow to the letter the same prescribed rules of conduct. It is important for us to recognize this fact so that we can adjust ourselves accordingly.

First comes the problem of work. Work is the most necessary and universal occupation in the world for the average human being, because it is the avenue through which he must secure the means of preserving his own existence in comfort and with satisfaction and the means of making at the same time some provision for perpetuation of the race. Work, judiciously chosen and diligently performed, is much more satisfying and gratifying and also far more conducive to the joy of living than any form of play. Especially before the war, an undue emphasis was placed on shorter hours of work and longer hours of play, with too much energy expended in the promotion and interest of play. In both work and play the visual apparatus is called on for a service never before approached in the history of mankind. It is therefore proper that some analytical thought should be given to these activities, which demand so much of the visual organs and so vitally affect their power and endurance. It may be asserted with perfect confi-

dence that a proper combination of work and play will secure the best rounded physical and mental development.

There is great physical and mental, and even ocular, value in judicious play if it is guarded and not misdirected. In the past few years, physicians have seen an increasing number of young college students with eye distress caused by the failure of play to perform its proper function of real relaxation. In order to play successfully, according to modern standards, the hardest work is often required. The high tension spirit of modern play often is the most exacting work, and it leaves its mark in the form of an exhausted state of the nervous system, with an actual elevation of blood pressure and also various digestive disturbances that react unfavorably on the delicate mechanism of the visual organs. This is not a theory but a fact repeatedly brought out in consultation with young boys and girls who are complaining of eye deficiencies that are not, as they think, primarily of ocular origin but are due mainly to nerve exhaustion.

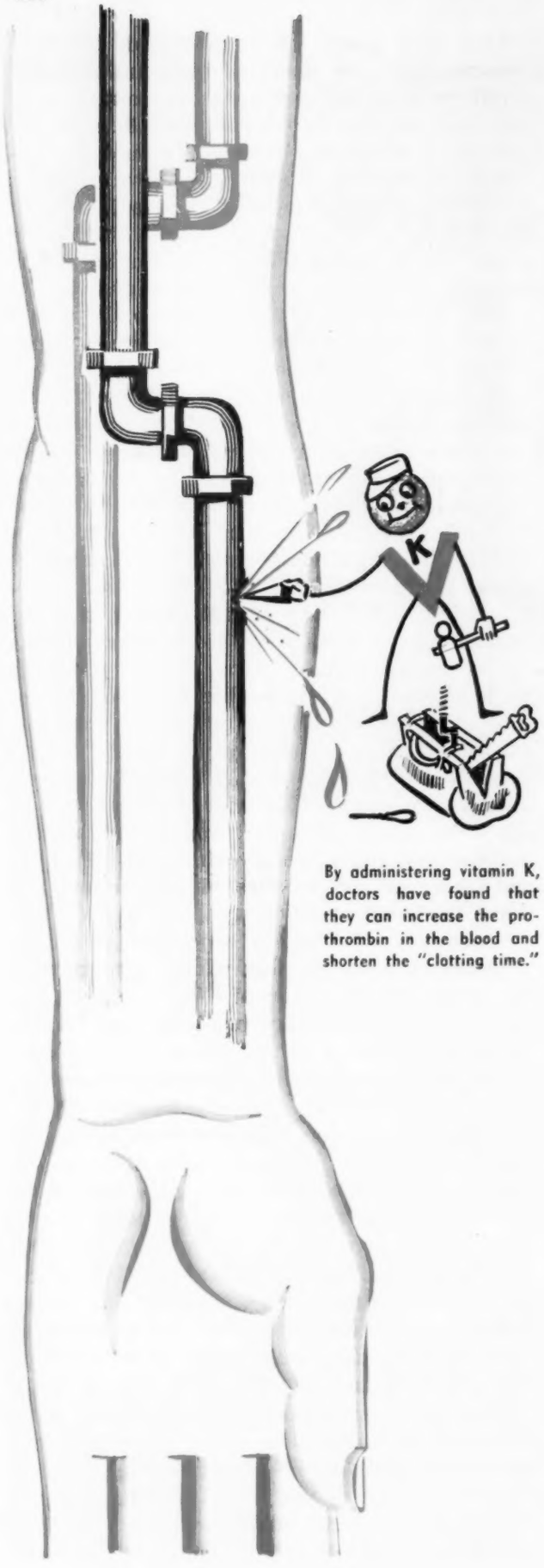
at Work and Play

Many times the most persistent types of ocular pain occur where in reality no actual abnormalities exist in the eyes themselves but where a very real nerve weakness is evident. The patient is sometimes insistent that the trouble must be in the eyes because the pain is so definitely located in the eyes. The situation is easy to understand. The eyes are the only geometric structures in the entire body, and they must work with exact precision or not at all. They must work automatically, instantaneously and perfectly in the thousands of positions and in the various degrees of accommodation and convergence which they must undergo every day. This requires a complex series of performances by the ocular apparatus, and we must not forget that every particle of the power and direction thus manifested must come directly from the brain, which is the combined power house and signal station without which nothing can be accomplished.

This fact must be emphasized forcibly, because there are many of these unfortunate people with acute and sensitive minds, with high purposes and splendid resolutions, often with heavy responsibilities, who would be willing to do anything within their power if only they could see with comfort and satisfaction. Their general physical health is apparently good, though not really up to standard, for they are subjects of nerve exhaustion.

The difficulty seems to center in the visual organs because this is the point where the most intricate combinations are undertaken. The eyes represent the point where the complex, delicate forces of vision meet for mastery of the subtle art of seeing images and interpreting them within the brain. Therefore, the fundamental fact with regard to all play, all exercise and all work is that in no case should this activity be carried to the point of exhaustion. There has developed in our country a kind of obsession to the effect that the strength of the individual is in proportion to the energy which he is required to expend. It is generally believed that for the earlier years of life he can afford sometimes to put forth excessive efforts and still return to a practically normal state through the natural recuperative powers inherent in youth. The records show, however, that the young men of pronounced athletic habits, showing extreme exhibitions of physical force, are not the ones who in the long run have the greatest longevity.

Doctors are consulted especially about the amount of work or play which is proper for those past the meridian of life. It is here that more than the ordinary prudence and caution must be observed. It is seldom that an aged man can profitably enjoy prolonged work or play, to the point of fatigue, without definite physical impairment. Yet he must be encouraged to indulge in some form of exercise, preferably in the open air. This should not include such strenuous games as tennis, wrestling, boxing, running or swimming, but rather he should confine himself at this stage of life to golf, horseback riding, walking, fishing and other forms of mild exercise. One of the safest and most health-giving forms of exercise yet devised for young or old is golf; it is especially useful for older people, when not carried to the extreme of exhaustion. The most generally available and the least expensive form of gentle exercise is walking. It calls for only moderate exertion which can be modified easily to meet all the *(Continued on page 292)*



By administering vitamin K, doctors have found that they can increase the prothrombin in the blood and shorten the "clotting time."

WHAT is to be the next vitamin? To use an Irish bull, the next one has already arrived, and arrived with a bang! This is none other than vitamin K, the youngest of the clan. As has happened in many a family before, the elder brothers, A, B, C, D and G, have had to struggle against ignorance and indifference for recognition, while the youngest has had an easy time of it. Vitamin K (named for the initial of the Danish word that expresses its chief function, "koagulation") is only a few years old, but already it has been welcomed enthusiastically by the medical fraternity and is doing a man-sized job.

Coagulation is the scientific term for clotting. Now when "clotting blood" is mentioned, most of us think of the splattered mass of blood in the neighborhood of an accident, after a badly injured person has been removed to the hospital. It is far more scientific to think of this in another way. A blood clot is the small patch of delicate, weblike substance which repairs the damage to a blood vessel that might otherwise result in fatal hemorrhage.

Coagulation or clotting is really a wonderful function which distinguishes blood from almost every other fluid in the world. Other fluids may change to solids, as water does when it freezes, but such a change involves the whole liquid mass. The clotting or solidifying of blood, on the contrary, takes place only when it becomes necessary for a leak in the body's intricate circulatory system to be stopped.

If a leak, no matter how small, occurs in the radiator of your car, it is merely a question of time before it runs dry. If a tea kettle or a tin can gets a hole in it, all the water drains away. If our bodies were subject to this same law, bleeding to death, or fatal hemorrhage, would be a frequent occurrence. When a person is wounded and a leak occurs in the intricate plumbing system of arteries, veins, and capillaries that makes up the circulation of the body, however, something quite different takes place. The blood, still fluid everywhere else, coagulates or clots in the neighborhood of the wound, and the leak is stopped; no more blood escapes. As in the case of the famous little Dutch boy who stuck his finger in the hole in the dike, the danger is averted and the body is saved from disaster.

What would happen if our blood did not possess this remarkable characteristic? We do not have to guess, for some people actually do lack this protective device. To such people

SAVING LIFE AT ITS SOURCE

By

FRANK HOWARD RICHARDSON

a tiny scratch, a razor cut while shaving, or the extraction of a tooth, means bleeding that persists sometimes for days and may even be fatal. Inherited by male children from mothers who transmit the characteristic without suffering from it, these unfortunate "bleeders," as they are called, are tragic figures indeed. Hemophilia, to use the scientific name for it, has run in several royal families; the recently ousted Spanish dynasty was afflicted with it. Hemophilia caused the death of one of the Spanish ex-princes within the past year or so.

In the case of young babies, strange to say, the clotting time of the blood is delayed. This is indeed strange, because it would seem that Nature, who rarely makes mistakes, had blundered this time. The tiny baby is particularly exposed to injuries which frequently result in bleeding during and immediately following his birth. So it would seem that Nature, if she were going to make any change at all, would have done better if she had arranged to have his blood clot more quickly at this time instead of less quickly, in order to guard against such casualties. But scientists discovered in 1937 that the clotting of the blood of the day old baby is not quicker, but considerably slower, than that of the normal adult. More than this, it is still further slowed down during the second and third days of life and doesn't return to the birth clotting time until the end of the first week.

Now it happens that bleeding during or immediately following birth is not only one of the most dangerous things that can take place, it is a fairly common occurrence as well. Death from hemorrhage at birth is one of the biggest causes of infant mortality. In fact, it has been said that intracranial hemorrhage (by which is meant bleeding inside the baby's skull) is the biggest single factor in the death of newborn babies, especially if we consider not only the fatal cases but also babies who survive with crippled minds and bodies. We have done a great deal to reduce infant mortality from many other causes, especially in babies over a week old, but until the past two years there has seemed to be no way in which we could cut down this tendency of the baby toward dangerous hemorrhage during his first few days of life.

In 1927, two Danish investigators discovered by accident that an experimental diet which they were feeding to chickens caused a marked delay in the clotting of chicken blood. In 1935, one of them discovered just what this lacking substance was. He named it the koagulation vitamin, or vitamin K.

We need not go into the highly complicated business of just how clotting of the blood takes place. All that it is necessary to know is that a substance called prothrombin must be present in the blood in sufficient concentration and in a sufficient state of activation if fibrin, the spider web material that makes the clot, is to be formed promptly when it is needed.

"Hypoprothrombinemia" has a terribly forbidding sound but if you take it apart, remembering that "hypo" means "too little" and "emia" means "blood," you will see that it means "too little prothrombin in the blood." In 1937, it was found that hypoprothrombinemia is the cause of this slow clotting that is usual, though not desirable, in the blood of the newborn baby. A plan for measuring prothrombin made this discovery possible.

It was in 1939 that experimenters drew the inevitable conclusion from these facts that bleeding at birth might be prevented. They administered vitamin K to infants and found that their blood speedily acquired a clotting time as short as that of the normal adult. Better than this, they found that if they gave the vitamin to an expectant mother for a period of time preceding the birth of her child, the infant would get this protection during and immediately following his birth, when he needed it the most. The life-saving function of the newly discovered vitamin K has been widely publicized in *(Continued on page 291)*

PRECAUTIONS IN THE POOL

Ewing Galloway

By CHARLES L. SAWIN

NOT SO MANY years ago, millions of American people confined their swimming to the short summer months. A few of the more fortunate were able to enjoy the sunny beaches of southern California and Florida.

Today both classes are regimented in the war effort. At the same time a nationwide trend has developed toward more swimming—a part of our physical fitness program. The answer is the indoor pool.

1. **Don't stay in the water too long. A forty-five minute swim is sufficient.**

2. **Keep exercising to avoid chilling.**

3. **When finished, don't loiter in a wet suit. Take a hot shower tapering to cool. Rub yourself well with a heavy towel.**

4. **Avoid icy showers. They are not necessary.**

5. **Avoid athlete's foot by drying feet well after your bath. Sprinkle feet well, especially between the toes, with foot powder before dressing.**

6. **Don't leave the pool in a rush. Allow yourself to get perfectly dry before leaving the heated building.**

7. **Most important of all, don't swim when you have a cold, or when you feel a cold coming on. This not only aggravates sinus conditions but usually increases the seriousness of your cold.**

Both young and middle aged are joining the ranks of the heretofore athletic few and braving snow and zero weather to the nearest indoor pool for their biweekly swim. A few natatoriums are ultra modern in design. Although the universities have the greatest number of streamlined tanks, hotels, Y. M. C. A.'s and athletic clubs also have a few.

One of the finest is located in the St. George Hotel, Brooklyn, N. Y. This natatorium with a daily average attendance exceeding 1,500 bathers not only has facilities making indoor swimming a pleasure but safeguards its patrons' health in every possible way. The water is filtered without excessive use of chlorine. Air conditioning units are in constant use during bathing hours, pumping fresh, purified air into the pool room. Pool owned sterilized bathing suits are issued to each bather after he has taken a good soap shower before entering the pool. Even water and air temperatures are maintained month after month. The decks of the pool are lined with sun lamps giving off artificial sunlight at regular intervals.

The pool in your neighborhood may be of the antique variety of which there are so many. Don't let this keep you from swimming. All pools today come under government inspection for water cleanliness. In order to operate, they must meet city and state purification standards.

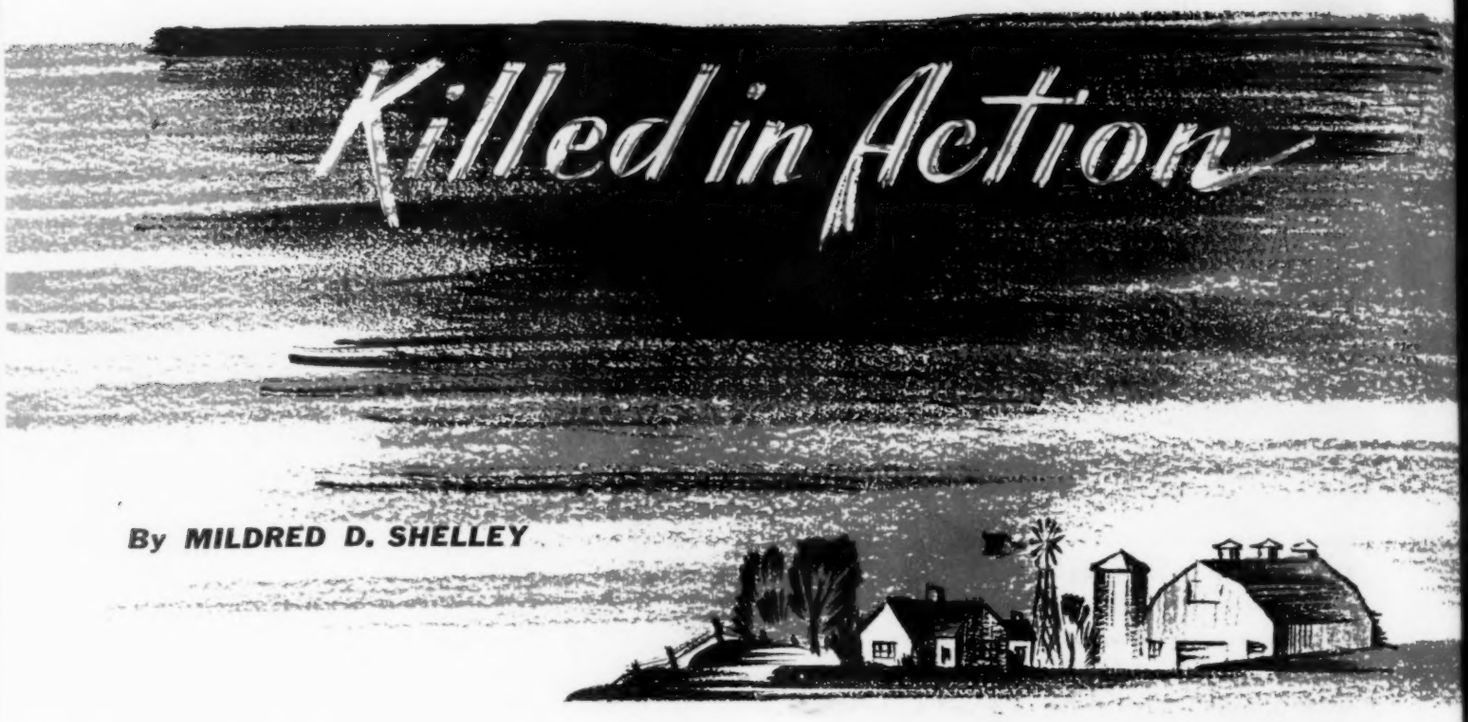
Listed on this page are precautions the bather should take to insure good health and maximum benefits from indoor swimming. Should your skin tend to become dry from the chlorinated water, this condition can easily be remedied by the application of oil to the skin after your shower.

The most may be gained from these winter plunges by setting up a working schedule for yourself in the pool. Begin the first day with a light workout. Increase the distance you swim each time without exhausting yourself. It is remarkable how easily you can get yourself into the long distance swimming bracket. Should your workouts become monotonous with your favorite stroke, get the instructor to teach you a new one.

If you find water getting into your sinuses from these amphibious activities, read HYGEIA for August 1942. The article "Swimming For Health" explains the correct breathing methods which go far toward making swimming a pleasure.

The war emergency has brought a boom to aquatic sports. The lad in his teens is thinking of the day in the very near future when he will be wearing the uniform of the armed forces, and his swimming ability at some crucial moment might give him a chance to save his life in the water. (Incidentally, he might as well practice up right now and get those Boy Scout merit badges to his credit!)

The 3-A's in their thirties expect the Army call very soon. They are taking it on themselves to get their bodies in *(Continued on page 293)*



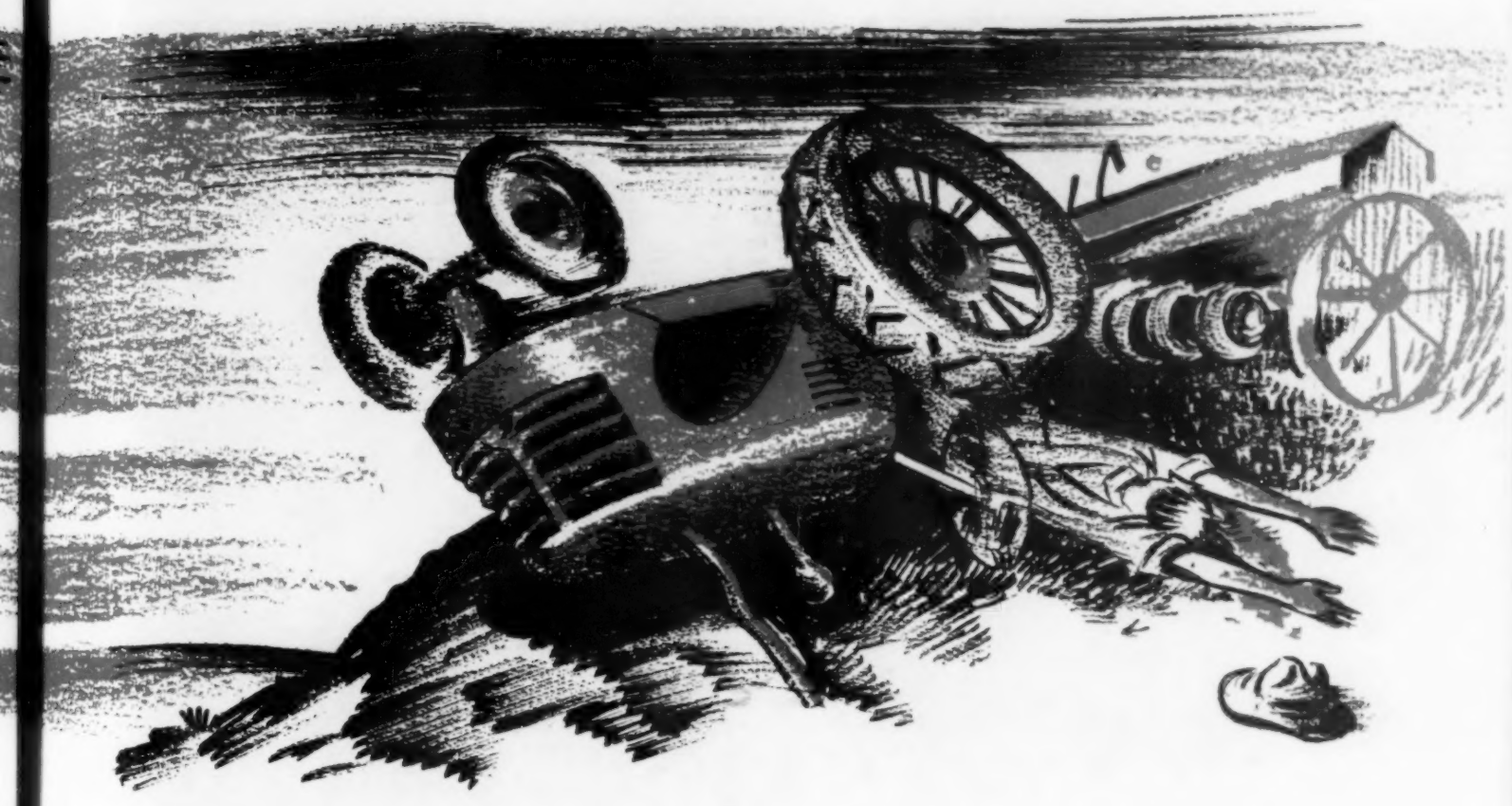
By MILDRED D. SHELLEY

ON THE FARM

ONE FINE TWILIGHT last summer a neighbor suddenly missed the chug-chug of Adrian Hagen's tractor, scanned the skyline and discovered it, overturned, silhouetted on a hilltop against the deepening blue. Adrian's sturdy body lay captive—and forever still—beneath one huge wheel. Perhaps he'd attempted too short a turn with the heavy machine and its trailing rake, or miscalculated the steepness of the slope and set his speed too high against the falling darkness. No one knows the answer, certainly not Marie Hagen, nor Tinie nor Annie nor little Adrian Junior.

The Hagen herd of Holsteins was just about the largest and heaviest producing in New York State's Orange County which is the rich dairyland of America. We needed Adrian Hagen as we need every farmer and farmer's helper in sight. Yet in 1941 we lost about 18,500 farmers by accidental death (and undoubtedly even more in 1942, as there has been a sharp increase in fatal accidents on farms, according to Ned H. Dearborn of the National Safety Council). Many of these deaths resulted from home, motor vehicle and public accidents, the same kinds more or less which claim victims from all walks of life. However, between 4,000 and 5,000 were farm occupational deaths. "The farm work fatality total," states the Council's *Accident Facts*, "was the largest recorded for any of the six major branches of industry, amounting to exactly one fourth of all worker deaths. As farmers include about one fifth of all our workers, fatal accidents of farmers are above average." And these figures do not, of course, include the thousands on thousands of nonfatal but crippling injuries nor the countless cases of occupational diseases to which agricultural workers succumb.

Farm work is far from the safe and serene occupation it is usually thought to be. Many other industries began to safeguard their toilers long years ago. It may have been public opinion or it may have been financial reasons that started the legislative ball rolling. At any rate, it was good business to protect the life and limb and eyesight of an employee in order to keep him in the working line and in order not to be obliged to pay his hospital bills and disability and death damages to his family. Accidents in other industries haven't been eliminated by any means and never will be, because some persons injure themselves with the most innocuous of tools and machinery, but they have taken a beating—industrial accidents have been greatly reduced.



Numerous safeguards surrounding many types of labor are in most cases not available to the farmer. In the few states where farmers do come under the Workmen's Compensation Act the worker is covered only if the accident is the result of machinery or occupational disease. Agricultural accidents are a somewhat different proposition anyway. The farmer is still lord of his domain, although he perhaps doesn't think so these days. If the notion possesses him to smoke in the haybarn or jump off a vehicle with a pitchfork in his hand, there's no one to stop him. A farmer performs more varied tasks than most workmen, too, being the world's greatest fixer and repair man. He's machinist, carpenter, electrician, handler of explosives and many inflammables. His ways of doing some things make many safety engineers and fire underwriters weep. If he's lazy, he's apt to be working in hodgepodge disorder which in itself is highly conducive to mishaps of many descriptions. If he's ambitious, as he usually has to be, his job is likely to become a struggle against time and weather and too much to do; a forty-eight hour week must look like a vacation to him.

Farm accidents vary with the kinds of crops grown, machinery and implements and animals used. Several states have recognized the agriculturist as safety's forgotten man and met the challenge face to face.

Kansas is a shining example. Its assessors, when making a house-to-house canvass for agricultural statistics in 1934, made also a census of farm accidents. They found that machinery, which so wonderfully increases the farmer's efficiency and scope of work, was unfortunately his biggest hazard. Animals, always and forever unpredictable, came next. Falls were third. These three caused 80 per cent of the accidents at that time. A safety campaign was organized, and within three years the farm work accident fatalities were reduced about 24 per cent, but Kansas wasn't satisfied. The president of the Safety Council appointed a farm accident committee which included the state superintendent of public instruction, 4-H Club leader, supervisor of vocational agriculture, managing editor of the Kansas *Farmer* and the Secretary of the Board of Agriculture. They published "A Farm Accident Primer," a story of the whys and wherefores of these lightning swift tragedies, and put copies of it into the eager hands of rural school children.

A great many sun-browned heads must have pondered overtime as *(Continued on page 290)*

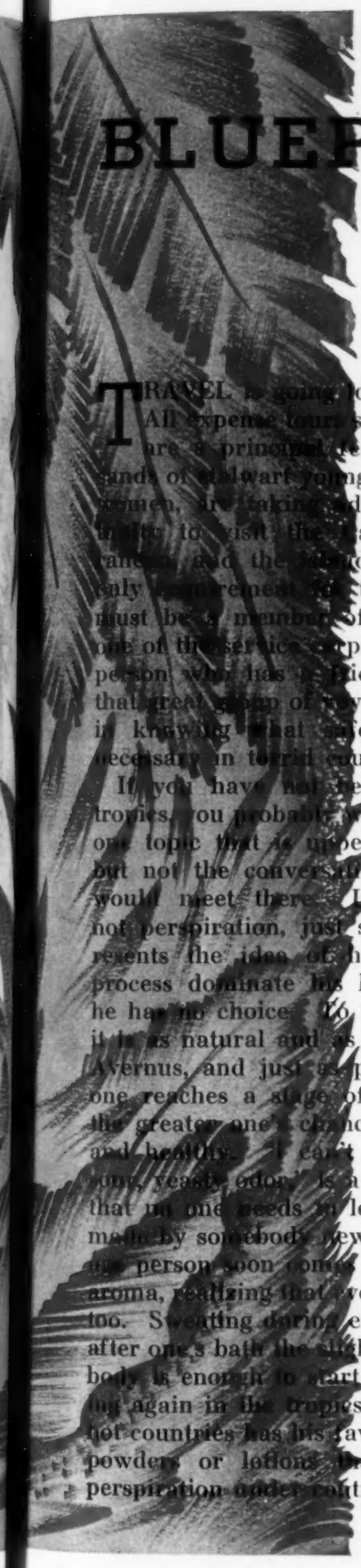
TO AVOID TROPICAL ILLS

1. Don't drink water that hasn't been boiled
2. Don't eat uncooked fruits or vegetables without washing in antiseptic solution
3. Screen against flies and mosquitoes
4. Provide for safe disposal of wastes
5. Exterminate flies, mosquitoes and rats

By CAPT. LUCIUS W. JOHNSON

Acme

BLUEPRINT FOR HEALTH IN THE TROPICS



TRAVEL is going to be different this year. All expense tours sponsored by Uncle Sam are a principal feature. Countless thousands of stalwart young men, and many young women, are taking advantage of this opportunity to visit the Caribbean, the Mediterranean and the islands of the Pacific. The only requirement for these tours is that one must be a member of our armed forces or one of the service corps to get aboard. Every person who has a friend or relative among that great group of voyagers will be interested in knowing what safeguards to health are necessary in torrid countries.

If you have not been to the hot, humid tropics, you probably would not appreciate the one topic that is uppermost in the thoughts, but not the conversation, of the people you would meet there. It is sweat—not glow, not perspiration, just sweat. The newcomer resents the idea of having this physiologic process dominate his life and activities, but he has no choice. To fume and rage against it is as natural and as easy as the descent to Avernus, and just as profitable. The sooner one reaches a stage of resigned tranquillity, the greater one's chance of remaining happy and healthy. "I can't escape from my own sour, yeasty odor," is a complaint so common that no one needs to look to know that it is made by somebody newly arrived. The average person soon comes to ignore his personal aroma, realizing that every one else is that way too. Sweating during exercise is all right, but after one's bath the slight task of towelling the body is enough to start the perspiration flowing again in the tropics. Every doctor in the hot countries has his favorite prescriptions for powders or lotions that will help to keep perspiration under control, but he realizes his limitations, for sweating is an important part of the mechanism that controls the heat of the body. Too much interference with it may have a serious effect on the general health.

Each of us has a delicate, built-in mechanism for maintaining the body at a certain temperature. To transform the fluid that oozes from the skin into vapor takes a certain number of heat units for each drop. By expressing fluid in this way and then evaporating it, the body gets rid of enough heat to keep its temperature down in hot weather. There are other things which help to accomplish this, but sweating is the one of which we are most conscious.

When an untrained man first begins to march or to work hard in the heat, he sweats profusely and feels the need to drink large quantities of water. After a period of training he will perspire much less and can more easily control his desire for water. We have little exact knowledge of the bodily mechanism concerned in this adjustment, but it is a most beneficial one. On the march, the juice of the fresh coconut is a most refreshing drink, and it is usually available in the tropics. They used to tell us in the Philippines that too much of this juice would cause inflammation of the kidneys, and it was the custom to limit the men to one coconut in the morning and one in the afternoon. I never heard any scientific confirmation of this belief.

The fluids of the body are kept at just the right degree of concentration by automatic controls. The relation between the circulating fluids and those in the tissues is also maintained at a pretty constant level. When there is a large loss of water from the body by perspiration, it must be replaced, for disturbance of the fluid balance may be a serious matter. One soon *(Continued on page 281)*

Women at

Condensed from a report of the Committee on the Health of Women in Industry of the Section on Obstetrics and Gynecology of the American Medical Association, H. Close Hesseltine, M.D., Chairman

SHORTAGE of manpower and economic pressure necessitate the employment of millions of women in industry. Sufficient medical studies are not available to permit the drafting of final recommendations about the effect of various kinds of employment on the health of unmarried or childless women, pregnant women and new mothers or mothers with home and family responsibilities. Experience in industry indicates that women absent themselves from work much more often than do men and that the duration of individual absences of women tends regularly to be longer. The available facts do not clearly assign the responsibility for this tendency directly to functions of the special organs of women or to childbirth (although it has been taken for granted by some), as against ordinary causes of disability which are equally applicable to men. These relationships need careful study over an extended time.

On the recommendations which follow there is substantial agreement. Additional statements will be made as greater experience and more accurate observations become available.

ESSENTIALS OF MEDICAL SERVICE IN INDUSTRY

The increasing employment of women in industry will intensify demands for competent medical supervision, especially in those industries using women for the first time. The Council on Industrial Health of the American Medical Association lists the essentials for such service as follows:

(*a*) A physician who takes genuine interest in a properly conducted industrial medical department and who is willing to devote regular hours to services inside the plant.

(*b*) Industrial nurses with proper preparation acting under the physician's immediate supervision or standing orders constitute the principal source of sustained industrial health activities for most small industrial concerns.

(*c*) Industrial hygiene services directed at improvement of working environment and control of unhealthful exposures provide for physicians and others under the guidance and assistance of the specialized personnel in the state and local bureaus of industrial hygiene.

(*d*) A health program which will include:

1. Good first aid, emergency and subsequent medical and surgical care for all industrially induced disability.
2. Good correlation with the family physician and other community health agencies for proper management of nonoccupational sickness and injury.
3. Health conservation of workers by physical ex- *(Continued on page 310)*

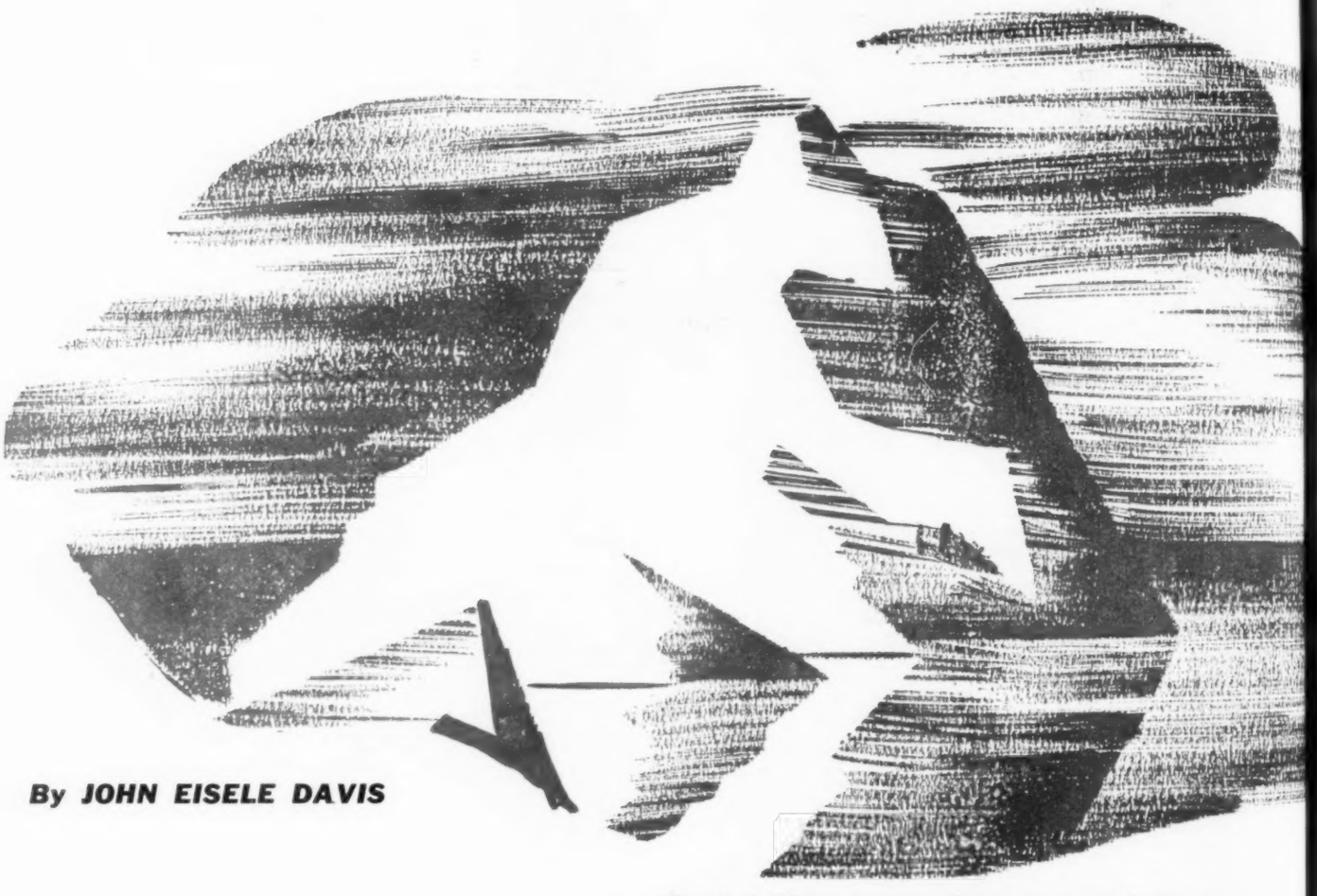
Work

Today, women are taking the place of men at benches and on assembly lines in the nation's war plants. Yet they are still wives and mothers, and their health must be guarded!

MRS. JONATHAN WILLIAMS was an average American mother who had reared six children satisfactorily and was, in fact, somewhat proud of her practical manner of meeting the many challenging situations of everyday life. She frequently talked with her family doctor about her children's ailments and tried to keep abreast of modern methods of hygiene in the home. She had seen one of the marvels of modern medicine when Walter, who had been down with a severe case of pneumonia, was veritably snatched from the jaws of death by one of the new sulfonamide drugs.

For the first time in her life, however, Mrs. Williams was confronted with a problem which she could neither understand nor solve. Anne had been a most dutiful daughter, considerate of her mother, brothers and sisters; she had worked hard around the house; she had the third highest average in the senior class at high school; she had always been happy and full of life. Of late, however, something had happened. She had become extremely irritable, was neglecting her classes and would sit in her room for hours at a time, brooding. Mrs. Williams thought at first that it was simply an episode of adolescence which she had heard referred to as "the birthday of imagination," in which inner tensions are created and young people resort to unusual and even unpredictable actions. It seemed more deep seated than this, however, as Anne gave herself over to periods of crying verging on hysteria and became so excitable that she could neither sleep nor rest. One of the children suggested that she must have heart trouble, since her heart seemed to palpitate so much.

"The girl is sick," Mrs. Williams explained to her husband, "and I think we should call the doctor." After a thorough physical examination, Doctor Jones found no physical condition that could account for this serious upset, and he suggested that Anne be sent to a psychiatric clinic for a more thorough examina-



By JOHN EISELE DAVIS

Mental illness may be compared to an iceberg—while a small part appears, the great bulk is beneath the surface

tion. "That is where crazy people go, isn't it?" Mrs. Williams inquired; "I know my daughter is not crazy." She had the viewpoint of the average mother who feels that mental illness is a disgrace and, since her family had never done anything disgraceful, it could not be visited by such a stigma. Doctor Jones went on to explain that mental illness may strike any one at any time, that it is not generally due to personal wrongdoing, and that it may be curable in many cases if treated in its early stages by the proper methods. He was definite in the assertion that the

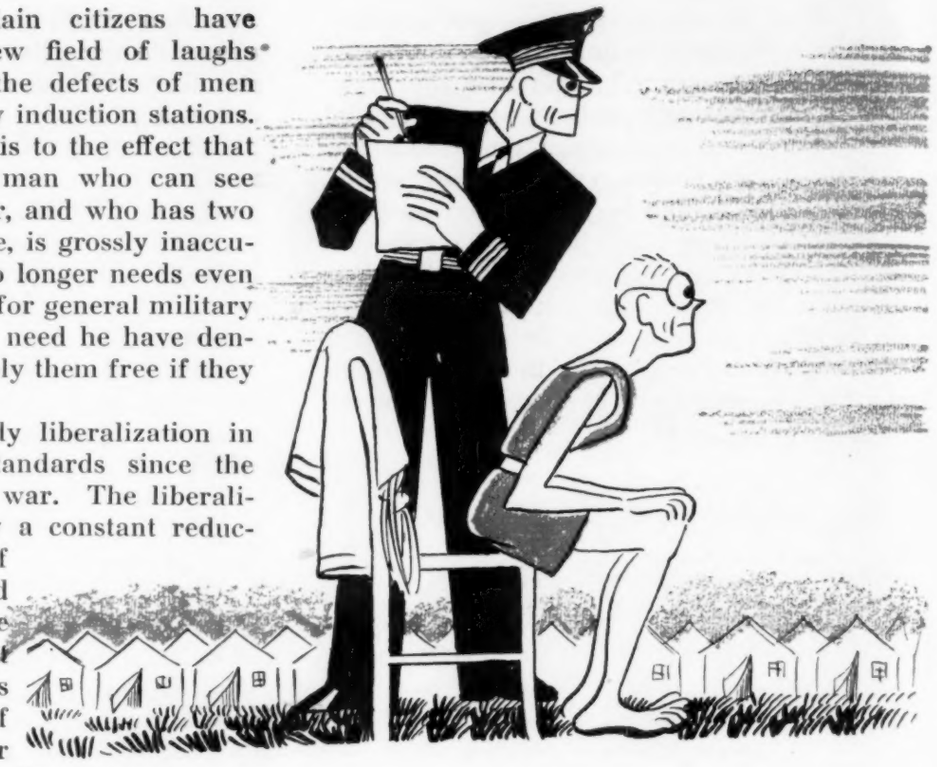
When mental illness strikes

home was not the place for such treatment in this instance. Mrs. Williams finally agreed to send Anne to the clinic, where her condition was diagnosed as manic depression, which, while it may be severe at the outset, is in the majority of cases curable. After spending seven months in the clinic, Anne returned to her home. With greater insight into her condition by herself and the other members of her family, she gradually got back on her feet, was happily married and now, ten years after this trying experience, has never had another attack!

Most of the twenty-six million mothers in this country are not much different from Mrs. Jonathan Williams. Practical guidance is needed to bring them comfort as well as understanding. We are reminded that a member of one out of every five families in the United States becomes so entangled in mental abnormality that he lands in a mental hospital; almost every time mental illness strikes, both the person who becomes ill and the family are unprepared. Again, there is a definite tendency to refuse to accept mental illness as a disease. The patient is regarded as simply stubborn, mean or lazy. Then there is the further complication of "taint." The family may feel that there has been moral laxity which has resulted in this terrible misfortune. Added to this is the fear of the mentally sick person; he is considered to be dangerous because we cannot understand the meaning of his actions.

Generally, the first thing that is done is to [illegible] the inner circle of relatives and friends. The parents may accept this peculiar conduct as something to be kept within the confines of the family, relatives and close friends, who will explain that John is simply "upset," that he has been working too hard, that he has a high strung temperament and needs a good rest; or that he has been mollycoddled too much and is in need of a little discipline.

The psychiatrist may recommend that the patient go directly to a mental hospital. He will not suggest this, however, until he has examined the advisability of a mental hygienic clinic or, in mild cases, care at home with regular check-ups and possibly the aid of a psychiatric nurse if one can be afforded. If it is decided that he has to go to a hospital, the relatives are, at times, confronted with many false fears. They are afraid that the patient may be injured by others who are considered to be dangerous; that if he is not already crazy, he will be driven crazy by the other crazy patients. As a matter of fact, the mental patient may be better off in such an environment, in which the stress of making a living has been relieved and where he does not have to compete so strenuously as in civil life. There he will find *(Continued on page 298)*



COMEDIANS and plain citizens have turned a fertile new field of laughs with stories about the defects of men sworn into service at Army induction stations. One of the current stories is to the effect that the Army will take any man who can see lightning and hear thunder, and who has two teeth. The story, of course, is grossly inaccurate. A draft registrant no longer needs even one tooth to be acceptable for general military service in the Army. Nor need he have dentures. The Army will supply them free if they are needed.

There has been a steady liberalization in certain Army physical standards since the United States entered the war. The liberalization, made necessary by a constant reduction in the civilian pool of available manpower and restrictions against the drafting of physically fit men with dependents, does not permit the induction of men who are physically or mentally unable to perform the duties of a soldier. The standards are still high in applications to those defects which would or which might make a man a liability to himself or the Army.

The Army, for example, wants nothing to do with a man who has a hernia, however slight. The hernia may strangulate at any time, not only putting the man out of action but making him a liability the Army must handle at the expense of time and men. The Army knows it will have enough medical problems without asking for extras. Further, the man is pretty sure to become a burden on the government through a compensation claim when the war is over.

Restrictions aginst men with psychoses, psychoneuroses and personality disorders have been tightened rather than relaxed. The first mobilization physical standards devoted three pages to definitions of nervous and mental disorders. The present regulations devote eight pages to analyses of these defects.

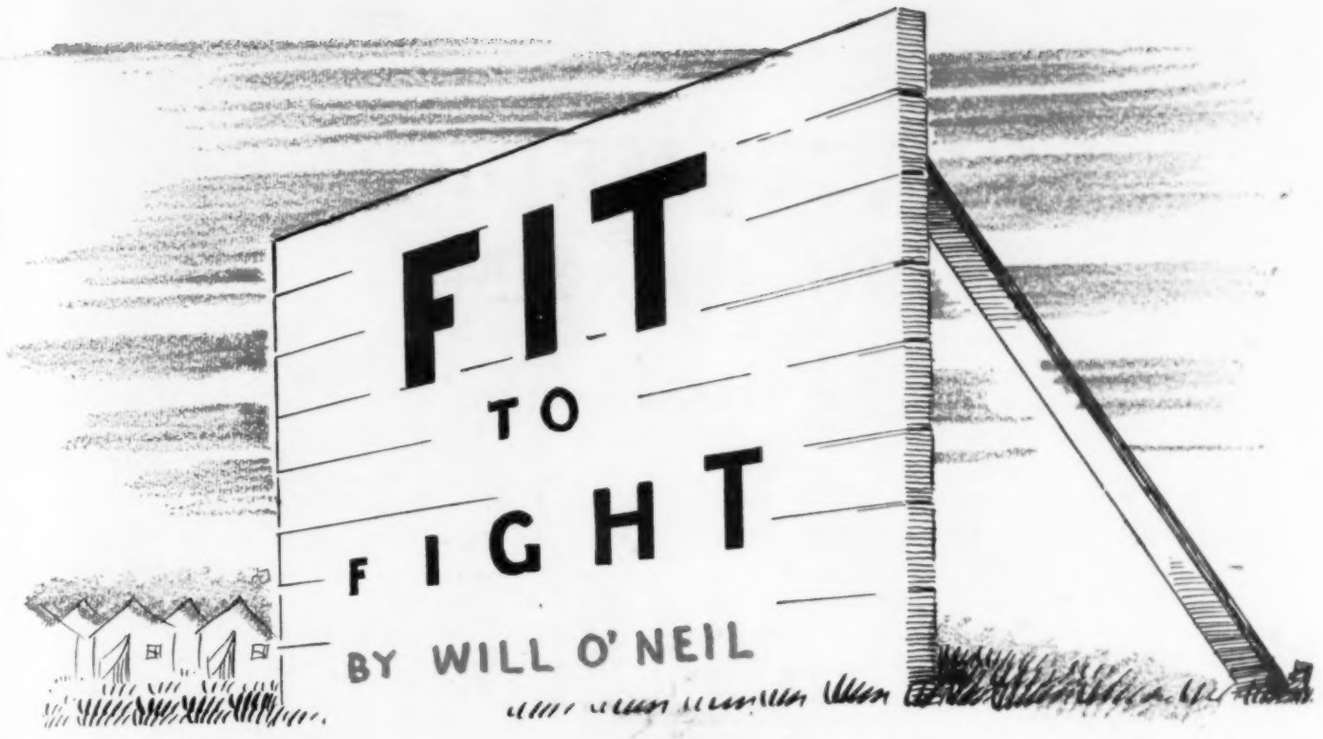
This nation is slowly wakening to the realization that our supply of manpower is not inexhaustible. The supply of men available to the Army has been limited by congressional action directing that men with dependents be deferred from service as long as possible.

The tide of physical defects in draft registrants rises as does the age of the men reporting to induction stations. This tide drops with the induction of 18 and 19 year old men and will stay down as the Army drafts the younger men with dependents. But it will rise again as and when it becomes necessary to draft the older men from the dependency groups.

The flow of manpower through the induction stations and into uniform must be at least constant. The way to keep this flow constant despite the tide of defects is to change the physical standards for induction.

A man appearing at an induction station before Pearl Harbor had about an even chance that he would be accepted or rejected on a physical and mental basis. Late last summer and early last fall, as the physical standards were lowered, the odds in favor of the man being accepted rose until now he has about two chances out of three of being accepted for service. This change, incidentally, went on in the face of a rising age level of men reporting for induction.

The Army has, on a physical basis, two classes of men. The best men are accepted for general, or combat, service. The generals wish that practically all such recruits could be perfect physical specimens from 18 to 26 years old, but there aren't enough of these men to make up the Army we need. Those with slight defects which will remain static (that is, will not suddenly incapacitate a man as a strangu-



lated hernia would) must be taken for combat duty. The more men we need, the more defects there are that must be overlooked.

The second group of men are those inducted for limited military service. They relieve the physically better men for the combat branches. Induction of such men did not begin until last August.

The standards of physical examination issued by the War Department under date of Aug. 31, 1940, were high when the number of men necessary under them is considered. The standards were revised and lowered in some instances under date of March 15, 1942, and again under date of Oct. 15, 1942. The latter orders made provision for the actual induction of the limited service men. This opened the Army door to thousands of men previously denied the opportunity to be of service to the nation.

Changes in standards have been major in the cases of some physical defects and minor in other instances. In some instances they were lowered during the first year of the war and, in a few instances, they were raised.

Originally the dental requirements were:

"A minimum of three serviceable natural masticating teeth above and three below opposing and three serviceable natural incisors above and three below opposing."

This meant a total of twelve natural teeth within the above limits. Men with fewer teeth than this minimum were placed in the classification which called for their induction at a later date in the limited service category.

The standards were lowered to permit the induction of men who had only enough teeth in their lower jaw to support or stabilize a removable denture, or plate. The upper jaw could be toothless.

The last orders permit the acceptance of men without any teeth in either upper or lower jaw. Such men are being supplied with full dentures by the Army to fit them for general duty.

Standards of eyesight have undergone somewhat similar changes. Registrants with a minimum visual acuity of 20/100 in each eye without glasses, if correctable to 20/40 bilateral with glasses, were the only ones accepted for service. Later regulations call for a correction to 20/40 in each eye for general military service.

These later regulations, however, first provided that men with a visual acuity below 20/100 in each eye but not below 20/200 in each eye (correctable to 20/40) might be accepted for general military service in all noncombatant branches. The latest orders remove this noncombatant restriction. In addition, the induction of *(Continued on page 314)*

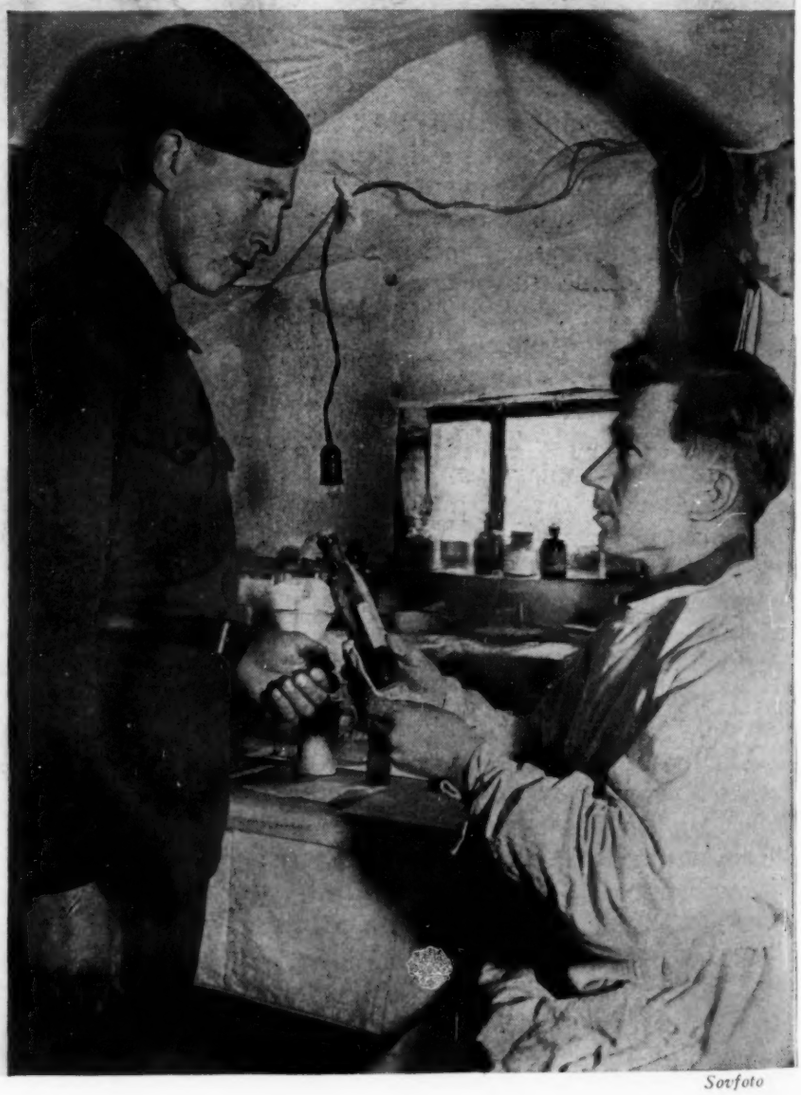
SOVIET MEDICINE IN WARTIME

By BERNARD KOTEN

AT A CONFERENCE of Soviet neurosurgeons held last June in the Ural Area, at Sverdlovsk, Professor Yudin reported on a new method of treating brain concussion which had resulted in complete recovery in the majority of cases. At this same conference, Dr. Shefter, a military surgeon, gave a report on the treatment of severed nerves through grafting on specially treated segments of animal nerve tissue.

In many instances these methods of treatment have been applied under most adverse conditions. Wounds have to be treated under enemy fire, in makeshift underground hospitals, even on the field of battle. Yet Red Army hospitals report that 70 per cent of hospitalized wounded are returned to active duty, and this is undoubtedly due to the fact that at the front the wounded receive skilled surgical aid within twelve to twenty hours. It has been found possible to bring highly qualified medical aid close to the front lines in spite of all difficulties and at the same time adhere to the fundamental requirements of antisepsis.

When necessary, operations are performed right at the front despite the menace of artillery fire and air bombings. Surgeons operate in sterilized smocks, gloves and masks. Portable electric lamps are carried to the front line hospitals. The instruments are good and are jealously guarded and cleaned by the



Sovfoto

Right: A field dispensary at the Russian front. Wounded Red Army soldiers are treated under fire

Sovfoto

Medical Nurse Liza Kozyukova equipped for field service with the Red Army in the North. Soviet hospitals return 70 per cent of wounded to duty

nurses. Dressings are sterilized on the spot in steam sterilizers in traveling field dressing stations.

Gas gangrene cases which in the last World War caused mortality in 75 per cent of the cases do not now exceed 3 per cent mortality. Antigangrene serum, injected in the usual therapeutic doses, accompanied by extensive application of sulfonamides, has proved successful. Professor N. Propper-Grashchenkov, corresponding member of the Academy of Sciences of the USSR, suggests that it is necessary to apply antigangrene serum and a prophylactic at the very earliest stages in the evacuation of wounded suffering from injuries of the skull or brain.

Still fewer cases of tetanus have been recorded. Deaths from stomach wounds in this war have dropped 33 per cent as compared to the 1914-1918 war; from head, jaw and thorax wounds 50 per cent; from spinal column injuries 80 per cent.

This has been greatly helped, as reported at a conference of base hospital personnel called by the People's Commissariat of Health to discuss the care of Red Army wounded in the spring of this year, by the strict specialization of Soviet hospitals according to types of wounded.

An effective system of therapeutic gymnastics has been introduced to aid the recovery of injured Red Army men. These are so set up as not to need any special equipment, and therefore they can be carried out even at field ambulance stations. In some cases as many as 97 per cent of the men so treated for injuries to their extremities have returned to the fighting ranks. Most of these cases were slight wounds which had left some stiffness in the limbs after healing. In one case a broken pelvis was corrected after a month of leg and pelvis exercises.

Since the war began, the military hospital personnel has been greatly augmented by young medical graduates. This last spring 15,000 doctors were graduated. This year it is expected that 24,000 doctors will be graduated. Last year many of the students were graduated from medical schools evacuated

from Byelorussia, the Ukraine, Esthonia, Latvia, Lithuania. This year 400 doctors were graduated from the Kiev Medical Institute now at Chelyabinsk, 350 from the Kharkov Medical Institute now at Chkalov. In Uzbekistan, there were 600 graduated, in Azerbaidjan 525, in Georgia 576. Before the war there were seventy-eight medical colleges with an aggregate student body of 112,994 young men and women in the USSR. This number does not include, of course, the schools in the Baltic republics, Bessarabia, or Western Byelorussia and the Western Ukraine. In addition there were 1,320 medical technicums teaching 248,181 students spread over the country. The technicums are middle professional schools which may be entered after seven years of schooling for training as doctor's assistants, junior medical workers, laboratory and research workers. The technicum students are put through a four year course. A technicum diploma will admit a student to a medical college, or he may enter a medical college on graduation from a ten year school (equivalent to elementary plus high school). There is also a wide network of medical research institutes in the Soviet Union. Prewar reports put the number at 253, employing 9,745 scientific workers carrying on medical research in every republic in the Soviet Union.

Research, plus war experience, has led to many new developments in treatment during the past year and a half. The scientist Dr. Kudryashov has developed "thrombin," a new hemostatic preparation for stopping hemorrhages. Dr. Davydov, winner of a Stalin prize for outstanding achievement, has invented a new method of freezing blood plasma for transportation and storage. Professor Goldberg has *(Continued on page 280)*

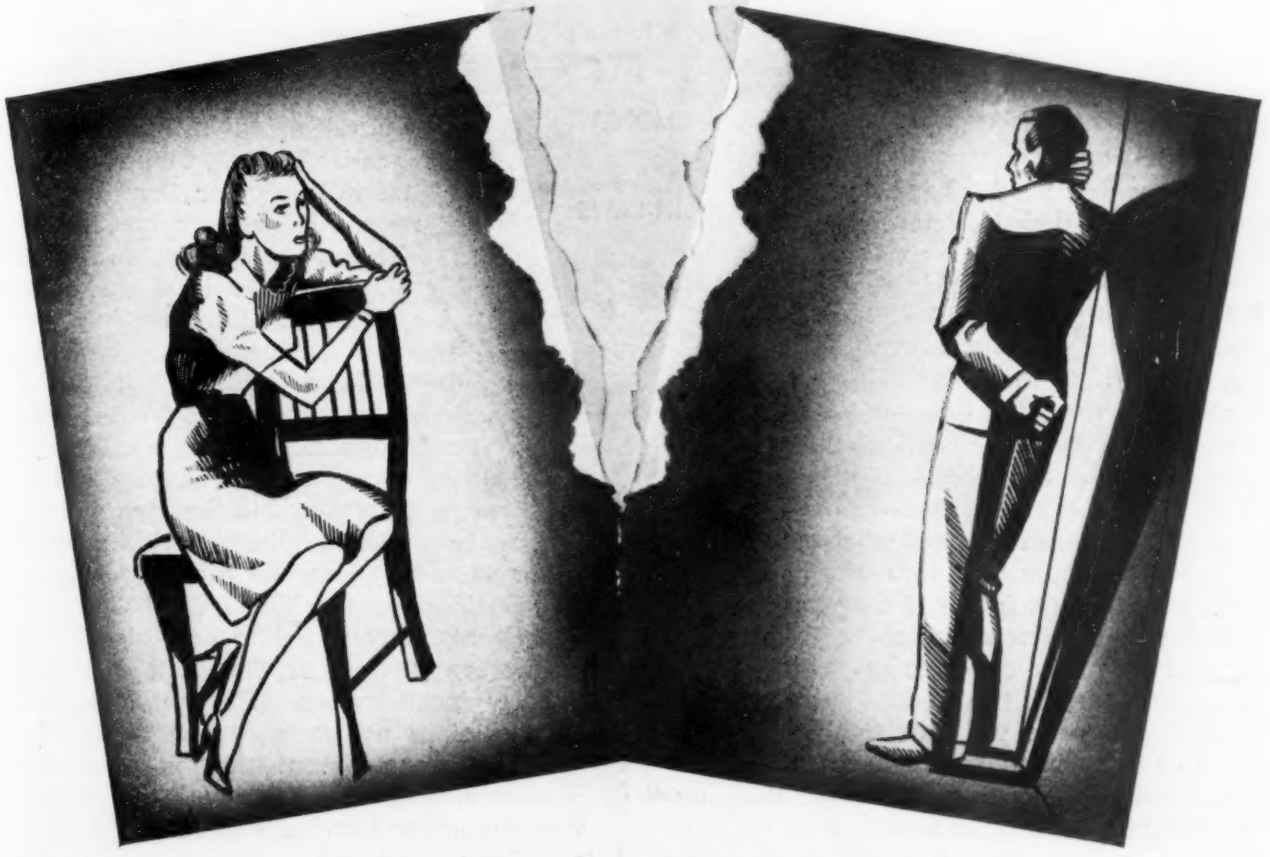
Red Army doctors give a blood transfusion in a field hospital on the western front. In modern warfare, medical aid comes up to the front line

Sovfoto

MARITAL FRUSTRATION *in Women*

By ERNEST R. GROVES

MANY MEN AND WOMEN in this country find disappointment in marriage. The number of these who finally seek divorce is but one evidence of this dissatisfaction. Moreover, a multitude of husbands and wives, although for one reason or another they do not express their unhappiness openly through divorce, are unsatisfactorily adjusted in marriage. There are, of course, many causes of this discontent. Marriage covers a wide



range of relationships and offers many possibilities for trouble. One of the common sources of contention is money; another is in-laws; a third comes from an incompatibility which is the result of great differences in background, disposition or life purpose.

We have had contact in our Institute for Research in Social Science with men and women who seek help to make their marriage a success, or who ask advice because it is already on the rocks. One of the most common problems is an unsatisfactory physical relationship as husband and wife. Some specialists estimate that one third of American wives do not achieve a normal, satisfactory physical relationship in marriage. This statement may seem startling. The impulses which nature has taken such great care to keep strong, generation after generation, are necessary in order that the race may be perpetuated. They are not given merely to men but to both men and women. The prevailing difficulties in this regard among American women are a major social problem.

Marriage covers a wide range of relationships and offers many possibilities for trouble:

PHYSICAL FAILURE

INCOMPATIBILITY

MONEY

IN-LAWS

Frequently we find among those who have cases of this sort brought to their attention or who themselves suffer in this way either indifference or a fatalistic attitude. Often those to whom the husband or wife come for help fail to consider the problem as they would any other disturbing physical condition; they minimize its importance, say that after all it is a small matter. Advisers may suggest that it would be best for the woman to forget her dissatisfaction and think of the other more successful aspects of her family life. Husbands may take this same attitude, when they should be most eager to make marriage as satisfying for their wives as for themselves. Indifference is most unfortunate. Frequently an unnecessary inadequacy in marriage is accepted and merely ignored year after year. A fatalistic reaction to the problem is disastrous.

Both indifference and fatalistic thinking are the result of ignorance. Only recently has sex adjustment in marriage received attention in the training of medical students and in the practice of physicians.

When the woman who is unsatisfied in marriage comes to the scientist who is experienced in dealing with the physical and mental aspects of such problems it is found that there are two different sources of trouble: one is psychic, the consequence of personal and social experience, and the other is physical. The trouble may be with the husband rather than the wife.

Those who enter marriage with a liability toward some kind of difficulty in their physical adjustment are likely by understanding how such troubles arise either to escape having them or to get rid of them before they become firmly fixed. To be thus forearmed it is necessary only to carry into marriage the same kind of preparedness that comes from understanding other types of problems. Although one fortunately need not have a profound knowledge of the influences that disturb good husband-wife adjustment, the ideas must be clear and concrete. The danger of serious trouble comes from the fact that often men and women, especially the latter, go into marriage with only hazy thinking about its physical aspects. They do not realize the importance of marital adequacy or the conditions required for its achievement.

The psychologic causes of physical failure are least understood by most young people. We call them psychologic because it is in the feeling and thinking that we discover the source of the barrier to good adjustment. The reasons why these wrong attitudes have developed are usually found in the earlier experience of the individual. This generally means that there have been wrong suggestions or teaching. Most frequently parents have failed to deal rightly with the sex interest of the child during the early years when false or wholesome impressions are so easily acquired. It is not always a parent that is responsible. However, when the home deals intelligently with the natural curiosity of the child in matters of sex, untoward

(Continued on page 296)

Immunization in Hawaii

WITH the entire world in peril of pestilence during wartime, medical authorities in Hawaii are taking steps to guard this outpost of America against the possibilities of germ-borne invasions. For the first time in this war, an entire civilian community is being immunized against typhoid fever and smallpox, and the children are being protected against diphtheria. Today the island of Oahu, with a population of approximately 300,000 persons, has been given typhoid and paratyphoid injections and vaccinated against smallpox, and children from 9 months to 10 years of age have been given diphtheria toxoid.

To the armed forces and civilian population in Hawaii this means that the chances of epidemics of these diseases have been greatly lessened, and if any of these diseases do strike, the number of cases and the mortality will be greatly reduced. To the people of Oahu, the immunization means further safety to themselves and their children in the event they are hastily evacuated to other areas. Here they would probably live in more crowded groups under less comfortable and satisfactory conditions and be exposed to the elements.

The mass immunization program was formulated by the Territorial Board of Health in close cooperation with the military authorities following the issuance of a military order requiring vaccination of the population against typhoid fever and smallpox. The first immunization campaign was carried out in the rural districts of Oahu, which would be the first island to be evacuated in the event of invasion and attack. Because all islanders had previously been catalogued for identification in case of any emergency, their identification certificates and numbers were used in a master plan to check off all persons immunized. The health authorities believe it is the first complete record of a mass immunization ever made.

Rural Oahu, with approximately 65,000 persons, was immunized by six teams vaccinating about 1,000 people a day. The service personnel, civilian employees of the Army and Navy and a number of defense workers in rural Oahu were immunized by their own physicians and nurses in a separate program. Excellent cooperation was obtained from school teachers, students, Red Cross workers, plantation personnel and N.Y.A. workers, who aided the fifty public health nurses and six doctors of the Territorial Health Department. Scientific supplies for rural Oahu were provided by the Army, while for Honolulu, the Territorial Office of Civilian Defense provided the equipment and supplies exclusive of vaccines.

Convenient clinics for the immunization program were located in the many schools and first aid stations throughout the island. Through the cooperation of private physicians in the city of Honolulu who cooperated in the program by charging only a nominal fee, a large number of persons were vaccinated before the effective date of compulsory vaccination. On the outside islands, voluntary immunization against these diseases is being carried out by private physicians for their districts.

"War promotes bacterial exchange," Dr. M. F. Haralson, Territorial Commissioner of Public Health, said. "The island of Oahu is being given as complete protection as possible against three serious communicable diseases which might have affected large groups of the Army and civilian population and left them helpless when the services of all are needed in defense of the islands."

For the first time, an entire civilian community has been immunized. ELIZABETH PEET tells how.

ATMOSPHERIC PRESSURE

TO THE EDITOR:

What is the greatest atmospheric pressure that the human body can safely stand?

THERE have been instances where man was exposed briefly to as high as fifteen atmospheres (totaling over 200 pounds per square inch) without any evident harmful effects. To avoid injury, a person exposed to marked changes in atmospheric pressure, especially an increase, must however take special precautions to maintain an equalization of pressure on both sides of the ear drum. This is brought about voluntarily by frequent acts of swallowing, causing the Eustachian tubes to open and admit to the middle ear cavity, and consequently to the inner side of the ear drum, air which is under the same pressure as that in the external auditory canal where the outer side of the ear drum is located. The difficulty in such high exposures lies not in the compression (that is, the increased pressure) which takes place, but in the decompression and time involved in restoring the body to sea level conditions, where the atmospheric pressure normally registers 14.7 pounds per square inch.

In this connection it is to be remembered that during decompression the absolute pressure can always be halved immediately, but the remaining pressure must be reduced by stages in the "air locks," and this takes up considerable time when the compression is exceptionally high. If decompression is brought about too rapidly, nitrogen bubbles form in the blood stream and tissues and produce the disabling conditions variously called "the bends," divers' palsy, caisson disease or compressed air illness.

To protect workers, some states, notably New York, have passed restrictive laws in order to prevent overexposure and thus invite too rapid decompression.

In general, 50 pounds pressure (a working or gage pressure represents pressure above that of the atmosphere at sea level) is the upper limit for work except in extreme emergencies. For instance, in New York State a worker can be exposed to a gage pressure of 50 pounds for not longer than one hour, but he can be permitted to work seven and one-half hours if the pressure does not exceed 22 pounds.

By A. D. TUTTLE

TO THE EDITOR:
What is the highest altitude that the human body can safely withstand?

THE HIGHEST ALTITUDE ever attained by man was the record of 72,395 feet (13.7 miles) established by Captains Stevens and Anderson of the United States Army Air Corps in their gondola balloon ascension from the Black Hills, South Dakota, on Nov. 11, 1935. To protect their lives in reaching that great height they had to seal themselves, hermetically, in the metallic sphere (gondola) suspended to their helium inflated balloon. Without such life-sustaining pressure in their gondola, plus provision for maintaining the oxygen supply at a requisite level, they could not have survived at the altitude reached because there is not sufficient atmospheric pressure 13 miles up in the air to support life without artificial aids. (The atmospheric pressure, which at sea level registers 14.7 pounds per square inch, gradually decreases as altitude increases, and 50 miles up it is probably not measurable at all.)

As one ascends into the atmosphere and attains altitude, unconsciousness will occur at about 23,000 feet unless artificial oxygen is taken, and around 43,000 feet, even when one is breathing 100 per cent oxygen, unconsciousness will again occur unless the deficiency in atmospheric pressure on the body, and especially in the lungs, is made up by artificial means in the way of a pressurized cabin or a pressurized suit. Therefore, as one gets above the 23,000 foot level and desires to go higher in an airplane or in a balloon, first artificial oxygen and then, later on, a combination of artificial oxygen and artificial pressure is necessary in order to provide protection and make possible a flight such as the epoch-making one of Captains Stevens and Anderson. Under such protective conditions an airplane reached an altitude of 56,000 feet.

Gonorrhea

THE TRAGICOMEDIAN

By GREER WILLIAMS

IN THE FIRST of the HYGEIA series on venereal infection, syphilis was described as the "great tragedian" among man's diseases. Gonorrhea, in contrast, has been cast in the role of a buffoon or tragicomedian. This curious analogy cannot be attributed to any generally less destructive nature, because gonorrhea is capable of producing major disability, but to the careless attitude men have assumed toward it. Syphilis always has been taken seriously. Until recent years gonorrhea has been accepted even by the enlightened as little more than a disrespectable but not intolerable occurrence. In fact, health authorities have dubbed it "the stepchild of venereal disease control."

The habit of taking gonorrhea lightly rose, as far as the medical profession was concerned, not simply from the indignity of the disease but from the lack of an effective method of treating it. Private practitioners tended to shun gonorrhea patients and public health officials to ignore them. For syphilis, there were specific drugs to be injected into the blood; for gonorrhea, bothersome local treatments of uncertain effectiveness.

Three years after the passage of the National Venereal Disease Control Act in 1938, providing state health departments with funds to maintain public clinics, only 70 per cent of the 3,000 or so cooperating clinics would accept gonorrhea cases. With the recognition of the sulfa drugs, particularly sulfathiazole, as a quick, simple and specific remedy for gonorrhea, however, the general feeling of futility among public health leaders gave way to optimism. The National Venereal Disease Control Program now insists on equal clinical emphasis on gonorrhea, and its United States Public Health Service administrators talk of the possibility of making this age old affliction a rarity in the next ten years.

At present, gonorrhea, far from being a rarity, is one of the most prevalent of diseases, frequently compared with the common cold in its spread. Always a plague of fighting men, gonorrhea at the outbreak of war was the leading cause of time lost from service in the United States Army; in the Navy, it was second only to respiratory infections. Today, it occurs five times more frequently among soldiers and seven times more frequently among sailors than does syphilis.

Just how prevalent gonorrhea may be no one knows. The Public Health Service, from the number of gonorrhea cases reported on examination of Selective Service candidates, estimated a rate for the general population of 2.7 per 1,000. This would make a total of more than 350,000 cases at any one time. The figure doesn't tell the whole story, however, for two reasons. One is that the presence of the disease in many cases cannot be detected in a single examination. The second is that gonorrhea, in contrast to syphilis, which over the years stores up in the population like water in a reservoir, moves in a swift current through society, appearing and disappearing. Thus, while fewer cases of gonorrhea than of syphilis may be found at any one time, its annual incidence is evidently many times greater. The Executive Committee of the American Neisserian Medical Society estimates that "several million" acquire gonorrhea each year.

Gonorrhea, like syphilis, is spread from person to person principally by sexual intercourse. There are, however, two important modes of transmission to children. One is infection of the eyes of a newborn baby by gonococci picked up as the child is delivered through the vaginal canal. This type is known as ophthalmia neonatorum, and it was one of the commonest causes of blindness until it became the practice, enforced by state laws, for attending physicians to apply silver nitrate in the baby's eyes. A considerable number of cases continue to occur in some states, requiring renewed public health education and regulation. The second juvenile type is vulvovaginitis, occurring in little girls. They acquire the disease from sleeping with infected adults, by contact with freshly contaminated sheets or clothing, or, less frequently, from soiled towels. Only in rare instances can either syphilis or gonorrhea be picked up from toilet seats, as both types of infecting organism die quickly when exposed to the drying effects of air.

Gonorrhea is caused by a bacterium which, as seen under the microscope, resembles a coffee bean, with the two oval halves split apart but still lying close together. Infection first appears in the genito-urinary organs from three to seven days after exposure. The first symptoms are usually painful urination and a discharge of pus. Actually, what is occurring is a local inflammation of the mucous membranes.

The site and course of the infection differ in male and female. The infection in men occurs in the urethral canal leading to the bladder. If unchecked, it progresses up the canal and may extend into the prostate gland and testicles, causing acute pain, inflammation and swelling. Such a complication may close the seminal tubes with scars and adhesions and cause sterility. The tendency in the majority of male cases is for the symptoms gradually to subside and the infection to disappear within six months, even without treatment. Occasionally, the germs pass into the blood stream and infect distant parts of the body. The membranes of the joints are a favorite site, rheumatism or arthritis resulting, and the heart lining is sometimes attacked and damaged. Such complications bring permanent disability.

In women the beginning infection is usually localized in the vaginal canal. The discomfort may be too slight to cause concern. The discharge may pass unnoticed or be confused with the leukorrhea commonly caused by other organisms or by irritation. The infection more commonly is confined to the tissues and glands of the vagina, but it may spread through the uterus to fallopian tubes and ovaries. As in men, sterility is likely to result. Some women become chronic invalids. The infection may spread to the abdominal cavity, causing pelvic peritonitis. Surgical removal of the female reproductive organs is a frequent consequence in serious cases.

Thus it may be seen that gonorrhea is a crippler of men and women—soldiers and workers—and hence damaging to the war effort. From the individual's standpoint, it can bring him, at the least, discomfort, anxiety, and loss of time; at the most, invalidism, poverty, misery and unhappy marriage.

Unlike syphilis, which can be traced back in medical history only to the time of Columbus, gonorrhea is definitely a disease of antiquity. Records of it date from more than 2,000 years ago. The word "gonorrhea" is Greek for "seed flow." Galen, the ancient Greek physician, is said to have originated it, erroneously believing the disease to be an involuntary flow of the semen. Hippocrates, known as the father of medicine, wrote of gonorrhea in the fifth century B. C. Moses apparently referred to the disease in the 15th Chapter of Leviticus in laying down sanitary rules for its prevention. It is not known, however, whether the ancients could differentiate the contagious diseases which are specifically venereal, a word which refers to Venus, the Roman goddess of love. Some medical historians believe that the Biblical description of "unclean" diseases included not only gonorrhea but chancroid, a less common venereal disease resembling the primary stage of syphilis, and leprosy, which is not venereal in origin.

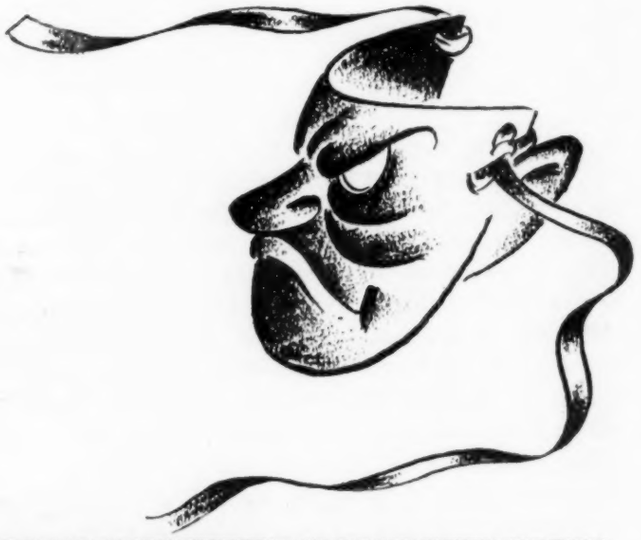
When syphilis became epidemic in the white race at the beginning of the 16th century, physicians clearly saw that it was different from gonorrhea. Later, however, the two diseases were constantly confused. In 1767, the great Scotch surgeon, John Hunter, proved to the satisfaction of himself and many of his successors that syphilis and gonorrhea were simply variations of one disease. He inoculated himself with pus from a syphilis infection and from one of gonorrhea and developed syphilis at both points. Unknown to him, the gonorrhea specimen contained a mixture of both diseases.

Hunter's classic mistake was exposed in 1837 when Ricord proved beyond doubt that syphilis and gonorrhea have little more than their mode of transmission in common.

Identification of the cause of gonorrhea awaited emergence of the new science of bacteriology. In 1879, Neisser, pursuing the hunt for the microbes revealed by Pasteur and Koch as responsible for contagious diseases, saw under his microscope a germ which he identified as the cause of gonorrhea. Beside the spinning, corkscrew spirochete, which was demonstrated in 1905 to be the cause of syphilis, the gonococcus, although invisible, is a fat, sluggish giant.

Despite mankind's earlier knowledge of gonorrhea, methods of diagnosing and treating the disease lagged behind those for syphilis. Hundreds of remedies have been advanced for the cure of gonorrhea, an indication, of course, that none of them was of great value.

The advent of the sulfa drugs, which constitute the greatest advance against infectious diseases since the dis- *(Continued on page 318)*



"now how do you like that?"

● "Jim used to call me the best little housekeeper in the world. But the other night he was cross and crabby as an old bear. Said reading his paper gave him a headache.

"Say, do you suppose all this dirt on the inside of his reading lamp could make that much difference?"

You'd be surprised how dust and dirt hold back light from your reading lamp. Wash the bulb and reflector and you'll get 25 to 30% more light. It's an easy way to conserve light and do your eyes a favor. Remember: Letting dust collect on your lamps is like throwing away the last 35 years of General Electric research . . . which has been making G-E MAZDA lamps better and brighter every year.

Other practical wartime lighting suggestions . . .

1. Use white-lined shades on your lamps for more light. If parchment shades are too bad, repaint or reline 'em.

2. Arrange lamps and furniture so each lamp can, if necessary, serve two or more people.

3. Sit close enough to the lamp . . . a few inches farther away may mean 50% less light.

4. Have your eyes examined by an eyesight specialist. Good light helps make seeing easier; does not correct eye defects.

G-E MAZDA LAMPS

GENERAL ELECTRIC

CAUTION!

Tuberculosis usually increases in Wartime

DOCTORS KNOW that tuberculosis usually increases in time of prolonged warfare. Such increases occurred during the last war, and have already been reported in some of the nations now at war.

Thus forewarned, the people of our country can forearm themselves with the facts about tuberculosis, to help avoid this dangerous disease.

Discovered *early*, tuberculosis is not often hard to cure. Unfortunately, early tuberculosis seldom advertises itself. Weeks or months may pass before even such vague signs appear as "touches of indigestion," a tired out feeling without good cause, or a steady loss of weight.

By the time more definite symptoms appear—a cough that hangs on, persistent pains in the chest, or blood-streaked sputum—severe damage may have been done. Curing the disease will then take longer and be more difficult.

Furthermore, during this period of development an infected person may have spread the germs among his family, his friends and his fellow workers. For tuberculosis is a germ disease and it may be "caught." Often, the germs picked up in childhood lie quiet for years, only to become active at some time when bodily resistance has been lowered through sickness, undernourishment, or unusual physical strain. Wartime demands upon our energy make it doubly important to guard against such conditions.

How to be forearmed

If you have the slightest suspicion that a member of your family has tuberculosis, or if any member has been in contact with someone who has active tuberculosis, have him see the doctor at once. By means of a thorough physical examination, including the use of the X-ray, the doctor usually can determine whether the disease is present. His advice regarding treatment or subsequent "check ups" should be followed to the letter.

The modern treatment of tuberculosis makes use of rest—complete rest for 24 hours a day. This gives the infected lung a chance to heal. The natural resistance of the body is built up by a well-balanced diet of nourishing food. While it may not be necessary to "go away" to be cured, the doctor sometimes advises a stay in a sanatorium. The latter assures scientific treatment, educates the patient in self-care, and protects members of the family from possible infection.

In both peacetime and wartime, the best preventive measure against tuberculosis is to *keep physically fit*. Sufficient sleep, rest and exercise, and a well-balanced diet build up the body's resistance to most kinds of disease.

Metropolitan will send upon request a copy of a helpful booklet, 43-Z, "Tuberculosis."

Metropolitan Life Insurance Company

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Red Cross Home Nursing Courses. Red Cross Chapters are offering women practical instruction in Home Nursing. Learning to nurse the sick in your own home and to keep your family well is a patriotic service, which will release more medical and nursing aid for the armed forces. If interested, apply directly to your Red Cross Chapter.

Soviet Medicine

(Continued from page 270)

prepared an ointment to speed the healing of wounds and ulcers. Academician Favorsky and Professor Shestakovsky have developed a method of preparing vinylic ethers, which stimulate the growth of tissue and whose oils can be successfully applied to the treatment of wounds.

Beside the various medical workers in the Red Army Hospitals, there can be found scores of volunteer workers. When the city of Kalinin was liberated by the Red Army, the doctors needed a hospital for the wounded Red Army men. When the population heard of this urgency they gathered from all corners of the town, pulling sleds loaded down with beds, tables, wardrobes, curtains, mattresses. Many cut wood and drew water. They scrubbed and cleaned and then cooked dinner for the wounded. Soon the head of the hospital had to refuse volunteers. They were "full up."

Those who cannot work in the hospitals write to the wounded men, visit them, bring or send them gifts. The beloved musicians and actors and actresses of the various republics of the USSR spend much of their time in hospitals and at the front performing for the wounded. On one occasion after a performance, Ivan Moskvin, the famous People's Artist of the USSR, learning one of the wounded had been too ill to attend, went up to his room and read to him for over an hour.

Mothers whose sons are at the front visit other mothers' sons and hold back their tears so that they can entertain their defenders and make them feel gay. School children make regular visits to Red Army men they adopt as brothers or fathers and then write them and send them gifts.

The whole country is making every effort to keep the hospitals at the front and in the rear well supplied and to heal the wounded and sick Red Army men. Their medical circles have noted with gratitude our activities in sending medical supplies to aid them in this work, not only for their intrinsic value but as a sign of solidarity with a valorous ally.

Blueprint for Health in the Tropics

(Continued from page 261)

learns to drink much larger quantities of water, both at meals and at other times. The secretion of the sweat glands contains minerals as well as water. It is now recognized that the fatigue and other symptoms of heat exhaustion may be due to loss of salt from the body, as well as to loss of water. It is an excellent rule, when in the tropics, to use more salt on the food, and to keep tablets of it in a convenient place for use when exercising. A considerable amount of salt can be added to the drinking water without materially affecting the taste. When feeling tired or depressed, try a salt tablet first, before reaching for the aspirin or the liquor!

Life in hot countries produces changes in the body which are pretty constant. Among them are a drop in the blood pressure and a reduction of certain elements of the blood. These have been described as evidence of damage to the body, but I believe them to be physiologic changes, conservative in their nature. To maintain the same blood composition that we require in temperate climates would be uneconomical. As a personal observation, the best work I ever did was done during three years in the Republic of Haiti, with a blood pressure well below 100, and the important elements of the blood at least 25 per cent below what is considered normal at home. The French sisters who worked in the Haitian General Hospital, and had been in the country for several years, had blood counts much below mine, but with no impairment of efficiency.

People with certain cardiac conditions and kidney inflammations do very well in hot countries. The skin appears to take over a large part of the work of elimination, so that the demands on the kidneys are greatly reduced. The unpleasant side of this picture is that the skin, with its greatly increased eliminative functions, is more likely to develop annoying forms of inflammation.

Fungus infection of the skin, also known as trichophytosis, or athlete's foot, is widespread in hot climates. This evil was practically unknown in the United States until our soldiers brought back the "spig itch" and "dhobie itch" from Cuba and the Philippines after the Spanish-American war. Now, four out of five have it, and the annual cost of treating it is said to amount to more than the $50,000,000 that Congress appropriated to fight that war. The susceptibility of individuals to this infection is variable. Some are permanently cured by a few applications of any of the fungicidal medicaments. Others carry it throughout their lives, in spite of any and all treatments. Those who belong to the latter group just have to learn to live with it and hope to keep it under control.

The fungus thrives best in regions of the body where there are heat, moisture and friction. Between the toes it finds a perfect place for its activities. From this refuge it threatens constantly to escape to other parts of the body, and the bath towel is its favorite vehicle. The constant moisture about the arm pits and groins offers a perfect invitation to the fungus, and eternal vigilance is necessary to keep it away. One should keep a separate towel for the feet and carefully remove the dead skin from between the toes after every bath.

Many dwellers in hot countries suffer from constipation until they learn that more roughage, or indigestible residue in the diet, is necessary. The cellulose of fresh fruits and green vegetables is the best material for this purpose, and these foods should be a part of each meal. If one does not drink enough water to make up for the loss by perspiration, the body will extract too much fluid from the contents of the large bowel. This will make the residue so hard and rocklike that it may damage the mucous membrane and cause much annoyance. Mineral oil may be useful in correcting this, but there is considerable evidence that it interferes with the absorption of vitamin A. The best way to control the tendency to constipation is by taking plenty of water and sufficient fresh fruit.

Diet, in the tropics, is the subject of almost as many tabus and prejudices as it is at home. Many who go there believe that they should greatly reduce the amount of meat, eggs and other protein foods in their diet. Some try to subsist entirely on vegetables and fresh fruits. One result of this is the great prevalence of sickness due to deficiency of vitamins. The doctor on his first visit to a hot country will hardly fail to be impressed with the number of people who complain of neuritis in one form or another. This was formerly ascribed to the humidity, or to excessive indulgence in alcohol, but it is now recognized that much of it is due to lack of the group of substances known as vitamin B. A large part of our supply of this agent comes from the protein foods that many people so carefully avoid in the tropics.

It has recently been demonstrated that the amount of vitamin B should be considerably increased in hot countries, even above what we need in temperate climates. By its use many of the depressing effects of excessive heat can be avoided. A man who is engaged in a sedentary occupation may be able to get along for a time on a restricted diet, but one doing strenuous work, as do most of the men in our Army and Navy during wartime, will require about the same diet that he would need at home. There is not the same need to keep the body temperature above that of the air, but only a relatively few heat units are required for this.

On our deer hunts in Guam, when we were successful in killing one, the Chamorro hunters would cut the animal open, drink the warm blood, tear out the heart, spleen and liver and eat them on the spot. Their gory faces expressed the most sublime delight. Kidneys and sweetbreads were taken home for the sick, the aged and the pregnant women. One can understand, in the light of recent knowledge, how accurate were the instincts which led them to choose these organs, so rich in the vital protective elements.

Liquor and its abuse may often be a serious problem in the tropics. Used in moderation it does no appreciable harm and gives great pleasure. If you have never tasted your favorite liquor mixed with fresh coconut juice, fresh pineapple juice or the juice of the sugar cane, you have some pleasant experiences

ahead. It is an old nautical custom to postpone the first drink of the day until the sun can be seen over the yardarm. Some of the old timers were rumored to have fudged on this by climbing the mast so that they could see the sun over the yardarm earlier in the day, but this was not good cricket. Throughout the torrid countries the advice is prevalent not to drink until twilight, and it is an excellent rule to follow.

Most of those who have trouble with liquor have laid the foundation of the trouble before they came to the tropics. Many men drift there because their personalities are such that they cannot get along at home, and they usually have no better success abroad. Joseph Conrad wrote that there is nothing the matter with ships, it is the men in them, and the same remark can be applied to the tropics.

Every effort is made to detect and eliminate the chronic alcoholic from our expeditionary forces before leaving this country. There is a basic personality defect in the alcoholic, the man who can't get along without liquor and can't get along with it, that makes him totally unreliable for a considerable part of the time. He is not only useless himself, but he has to have somebody take care of him and keep him out of trouble, and he is a real handicap to the organization. A chronic alcoholic in a position of responsibility is about as effective as the well known willing worker who tried to poke smoke down a rat hole with an auger.

Clothing is an important factor in bodily comfort. Experienced dwellers in hot countries usually wear loose, light clothing that permits circulation of air about the body and evaporation of the perspiration. It is the custom to bathe and to change everything, from the skin out, several times a day. The lavandera washes the clothes, not once a week, but all day, every day.

Our ideas of the dangers from the rays of the sun have undergone considerable revision in recent years. Formerly, it was thought necessary to wear an elaborate helmet with a cloth to protect the back of the neck, but now the hatless are likely to be in the majority. All the world has joined the mad dogs and Englishmen who go out in the noonday sun. Official photographs of the warriors in the Libyan desert show them driving their trucks, digging trenches and manning their guns with no more clothes than they would be required to wear on a California bathing beach. I have often suspected that they donned even that scanty covering just to have their pictures taken.

In the tropics one sees many white people who are pale and anemic in appearance. They have been warned against the sun and fear its evil effects, so they keep housed until sunset each day. People with this belief have always impressed me as being both sickly and unhappy in tropical countries, while those who took plenty of sunshine and kept up their normal physical exercise have always appeared to be happier and healthier. Many years of residence in hot countries have convinced me that most of us need no other protection from the sun than the pigmentation that we can develop in our skins by carefully graduated exposure to sunlight.

During my years in the Republic of Haiti there was an amusing example of the difference of opinion on the effect of the sun. The people of that country speak of it proudly as the Black Republic, and they have much to say about the superiority of the Negro race over all others. In spite of this, the native ladies of the leisure class appeared to believe it more aristocratic to be as light in color as possible, and they stayed in the house until sunset. Those from the United States, on the other hand, wanted to be as dark as possible, so they spent their days, practically naked, in the sun at the bathing beach!

Sun bathing is encouraged on ships carrying our armed forces to hot countries. By gradually gaining a good coat of tan en route, the men can avoid being disabled by severe sunburn after arrival.

The subjects that we have already discussed may be grouped under the heading of personal hygiene. In addition, we must realize that the tropical visitor is exposed to certain dangers by reason of his contacts with the local community. Many of these depend on conditions over which he has little control, so he should protect himself from them in advance. Every intelligent traveler, nowadays, goes armed against smallpox, typhoid and tetanus by methods which are well known to all. If typhus, yellow fever or cholera should prevail in the countries which he visits, he will have the protective inoculations against those diseases. In this way the most serious dangers to health are avoided.

Many disorders which once made life in hot countries such a gamble with death have now been brought under control. A strange quirk in the human mind has made it much easier to get money for study of diseases that affect our fighting forces than to secure appropriations to protect the civilian population. For this reason, many discoveries important to the public health have been made by doctors of our Army and Navy. Fortunately, they have all been utilized for the benefit of the general public.

Picture yourself as a tropical traveler. What diseases would you most fear? Probably some of those strange maladies which produce such grotesque deformities but whose names you have forgotten. It is fortunate for us that most of those are strictly native affairs and offer little danger to the visitor unless he comes into intimate relations with the natives in the poorest type of homes. The illnesses most to be feared are the same ones with which we are familiar at home—malaria and the dysenteries—and the danger from these can be greatly reduced by a few simple rules:

1. Drink no water that has not been boiled.

2. Eat no uncooked fruits or vegetables without first having them washed with an antiseptic solution.

3. Screen against flies and mosquitoes.

In addition to these are two which are the obligation of the community rather than the individual:

4. Provide for safe disposal of excrement and other wastes.

5. Wage unceasing war against flies, mosquitoes and rats.

If all these are scrupulously observed, you will be as safe as you are in the average community at home. Native servants, even those who have been carefully trained for years, are not always reliable and must be carefully watched. It is their universal belief that all foreigners are crazy, and that the silliest of all their lunatic demands are those which concern hygiene.

(The ideas and opinions here expressed are those of the author and do not necessarily express the policy of any government department.)

The natives have lived amidst filth and dirt all their lives, and they can see no danger there.

The importance of insects to human life has come to be appreciated only since our war with Spain in 1898. They cause more discomfort, more disabilities and more deaths than do all the wild animals and venomous reptiles that we have been taught to dread. Suspicion of their role as disease carriers was expressed before the Christian era but not proved until the present century. Ticks, flies, lice, chiggers, fleas, mosquitoes and the voracious hordes which come to feed on man and his food thrive with special vigor in hot countries. We can protect our bodies with shoes, gloves, leggings, nets and spraying, but still our lives will be plagued by their visitations. In Cuba the people used to tell us that we should not feel complimented by the attention we received from the clouds of tiny "gigums" or "no-see-ums," for all they wanted was the salt from our perspiration. The natives usually regard the insect pests with bored indifference, seldom even bothering to disturb their feeding, but the newcomer may be driven almost to distraction by their buzzing and stinging.

As the sun glides down into the ruddy western haze of the late afternoon and there comes some respite from the heat of the day, you can hear on all sides a low humming sound, friendly in tone at first but soon punctuated by many a "zing," and stabs of pain. The evening mosquitoes have arrived. Sometimes they come in such numbers that they resemble a cloud of smoke. They are the harbingers of malaria, yellow fever, dengue and other dangerous maladies. Those which carry yellow fever are likely to move right into the house with you and breed in your flower vases or any other small collection of water. If you are inhospitable and keep them out of the house, they will compromise on the rain barrel, little pools where the roof gutters sag, or your well watered garden.

It will often surprise those unacquainted with them to learn how small a collection of water will suffice to breed countless mosquitoes. An old tin can, a piece of coconut shell, a hoofprint alongside the road or a few drops caught between the stem and the trunk of a tree will provide a happy home for the larvae. Holy water fonts in churches have been found to be the source of yellow fever carriers. Formerly it was believed that some species fed only at certain hours of the day, but one who walks in the grass beside pools where they breed soon learns that a mosquito, when disturbed, is ready for a meal at any time. All this is of great importance in preventing mosquito-borne diseases, and control of mosquito breeding has been one of the greatest factors in improving the healthfulness of the tropics.

The role of the fly as a carrier of disease is so well known that little mention of it is necessary. But it is not generally realized that rats and mice are important distributors of several forms of dysentery, as well as plague and typhus. It is of the greatest importance to protect our food from contamination by them. In addition to this, they may destroy such a great quantity of the crops as to bring the native population close to starvation, so control of the rat population is an important public health measure.

During my first cruise in Guam the governor decided that something must be done about the rats that overran the island, so he offered a bounty of 1 cent for each rat tail brought to the treasury. At first there was very little response, but then the number of tails grew from month to month until there was danger that the bounty would bankrupt the island treasury. Then an investigation showed that the natives were removing the tails but keeping the rats for breeding purposes. Many had abandoned work on their ranches and were concentrating on the money crop, which was rat tails. Their point of view was that if the white man was crazy enough to pay good money for rat tails, they were glad to cooperate by raising them for the market! Every sanitary project among primitive peoples must be carefully studied to prevent misfires like this, for they do not understand or like sanitary regulations any better than do our people at home.

Ceaseless research has shown us methods of preventing most of the diseases that once made tropical countries so dangerous. The traveler of today has little to fear if he uses as much common sense in guarding his health as he does in his other affairs.

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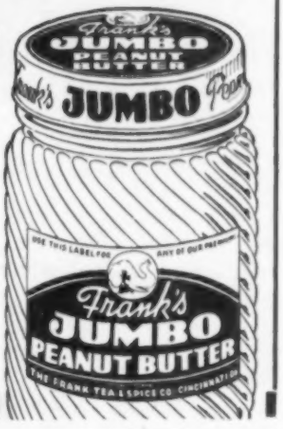
Frank's JUMBO PEANUT BUTTER

ACCEPTED AMERICAN MEDICAL ASSN.



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Please send me FREE SAMPLE packet of "Junket" Rennet Tablets and your illustrated recipe book of rennet-custard desserts.

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MORE VALUE FROM MEAT

By DORIS McCRAY

WITH meat shortages existing in many parts of the country and threatening elsewhere, problems of availability and price have focused the nation's attention on the value of meat in nutrition. How much meat do we really need? What will be the result if we are unable to get it? How can we get the most nutritional value from the meat we are able to buy? What substitutes can we use as our supply diminishes? These are the questions America's housewives are asking as they wait to see what the butcher can give them today.

Primarily, meat is a protein food. Proteins are compounds yielding nitrogen, carbon, hydrogen, oxygen, and usually iron, phosphorus or sulfur. Chiefly, proteins differ from carbohydrates in their rich yield of nitrogen. In the human body, proteins are utilized largely as "builders." "Protein intake is needed to build new body proteins and to replace such substances lost by ordinary wear and tear," says Dr. Morris Fishbein in his new book, "The National Nutrition." "The human body builds proteins," he continues, "by remaking the proteins that come into the body in the form of food. Chemically, the constituents of protein are called amino acids. Some proteins contain many of the essential amino acids. These are said to be proteins of high biological value. Others which do not contain the essential amino acids are said to be of low biological value."

Proteins coming from animal bodies—notably those found in meat, eggs and milk—are known to have the highest biological value. While it might be possible for human beings to get enough pro-

Meat

and your wartime food problem

THIS is the year of America's big effort toward victory, lasting peace, and a better world. Whatever we have to do or can do to help our fighting men and our government we shall do, willingly and gladly.

Nutrition on the home front is the big thing. America must remain strong, and that means good nutrition.

Food rationing need not deprive you of good nutrition, if you use wisely the foods available. Particularly, make your meats go as far as you can.

Use the cuts your meat-man has. If they are new to you, learn how to cook them. All of them can be prepared deliciously, all of them have that grand meat flavor, all of them are rich in nutritional essentials—complete, high-quality proteins, the B vitamins (thiamine, riboflavin, niacin) and important minerals (iron, copper, phosphorus).

Meat in your meal means appetite insurance, and without appetite there cannot be good nutrition. Spread the appeal of meat over every meal you can—even a small amount makes other foods gain new glamour.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

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Dr. Phillips
PURE CITRUS JUICES
Grapefruit; Orange; Blended Orange and Grapefruit provide Vitamins A and B with an abundance of
VITAMIN C
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THIS
Eating Business

WATCH YOUR DIET
By E. M. Geraghty. 8 pages. 10 cents.

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Compiled by Esther Bogen Tietz, M.D., to aid in gaining or losing weight. 10 cents.

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Contains several recipes for proper diet. 48 pages. 15 cents.

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By E. M. Geraghty. Recipes for making the prescribed dishes. Shows proteins, carbohydrates, calories, vitamins and minerals. 30 pages. 15 cents.

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By Laura A. Miller. Advice to the underweights. 8 pages. 10 cents.

A DIET HINT FROM PHILADELPHIA
By Wilmer Krusen. Ice cream as a food. 6 pages. 5 cents.

NERVES AND INDIGESTION
By Walter Alvarez. 4 pages. 5 cents.

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Always drink Kemp's Sun-Rayed—the pure, undiluted juice of WHOLE tomatoes. Delicious. The Sun-Rayed Co., Frankfort, Indiana.

DURKEE'S DOUBLE FLAVOR VEGETABLE MARGARINE

• Made by a new process that whips the goodness of the pure, pasteurized fat-free milk and wholesome vegetable oils right into the product.

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teins from seeds and cereals, the great bulk of such foods required to achieve this result would make the method entirely impractical. Meat, fish, milk, eggs or cheese are an irreplaceable essential in the daily diet.

The widespread notion that those who do hard physical labor need more meat is only fractionally true. With muscular activity, the need for fats, of which meat is one source, increases, but the need for the chief food value of meat, proteins, does not. Actually, the amount of protein required by the body is independent of muscular activity. In adults, the protein requirement is proportionate to the amount of active tissue present; in children, the requirement depends on this same factor plus the rate of growth.

One dietetic authority states the formula for measuring protein requirements as follows: "For the average man, a daily allowance of 1 gram of protein per kilogram of body weight is ample, being about twice the actual minimum requirement." Since 1 kilogram is about 2.2 pounds, this formula can be developed to show a daily requirement of about 70 grams of protein for the man weighing 155 pounds, with an additional 2 grams of protein required for each 5 pounds of added weight. The approximate protein content of common foods in the daily menu is shown in the following table:

	Protein
1 pt. milk	16 Gm.
½ lb. meat, fowl or fish	40 Gm.
⅛ lb. dry rolled oats	9 Gm.
¼ lb. white bread	10 Gm.
1 oz. cheddar cheese	7 Gm.
1 egg	7 Gm.

From these amounts, the approximate foods which must be eaten by the average adult to make up his daily protein need may easily be estimated. Also, it is readily apparent from the table that if meat is missing from the diet and an equivalent amount of fowl or fish is not available as a substitute, the consumption of other protein foods must be increased enormously to make up the deficiency.

For infants and growing children, the protein need is greater in proportion to body weight than it is for adults. Infants, as a matter of fact, need 2½ to 3 grams of protein per kilogram of body weight, while older children should have 1.10 to 1.25 grams per kilogram of weight. In elderly people, the protein requirement is gradually reduced until, in old age, the amount needed is only about half the 1 gram per kilogram recommended for adults.

Under ordinary circumstances, any reasonably well planned diet providing combinations of foods in sufficient abundance to meet the total energy requirement will almost necessarily furnish an adequate amount of proteins in accordance with the needs outlined here. Discussing the specific needs of children, a nutrition authority states: "With a proper amount of milk (¾ to 1 quart daily) in the dietary, the other foods may be selected with primary reference to other qualities than their protein content." Even in the face of meat shortages, moreover, a moderate amount of thought to the addition of other protein foods as a substitute for diminishing quantities of meat, plus attention to some suggestions concerning the preparation of meats included later in this article, should suffice to prevent the average American family from suffering any loss of necessary proteins on account of the meat supply. In this connection, too, the suggestions for utilizing many meat products commonly overlooked or discarded heretofore, as set forth in "The Food We eat: II," by Miriam Zeller Gross in HYGEIA for March 1943, may be extremely helpful.

By no means, however, is the food value of meat restricted entirely to proteins. Meats are also important sources of minerals, thiamine (vitamin B_1), niacin and riboflavin (vitamin G)—all nutrition essentials. Liver, for example, is widely recognized as an important source of iron; heart, tongue and brains—now among the little used meat products—are also rich in iron. Phosphorus and other minerals needed by the body are also found in meat. Here again, when meat is absent from the diet, the mineral deficiency may be made up by additional quantities, in the case of iron, of beans, green vegetables and cereals.

While meat, and chiefly pork, is a good source of vitamin B_1, a loss of B_1 resulting from diminishing amounts of meat in the diet may be made up by means of an increased intake of whole wheat bread, en-

riched bread or cereals and milk. Similarly, losses of riboflavin and niacin may be adjusted by the addition of other foods than meats, though it should be emphasized that in every area where market conditions permit the inclusion of at least one serving of meat a day per person should be preserved in the interests of best nutritional results.

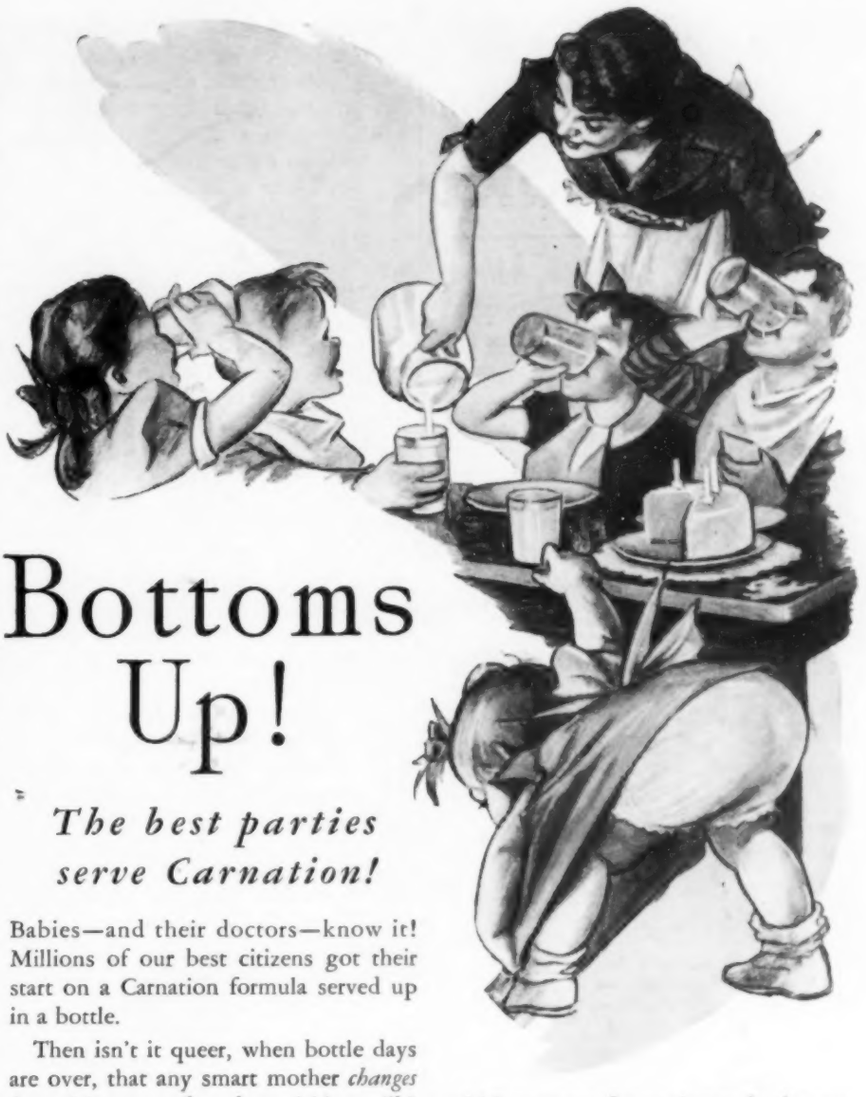
Generally speaking, American habits of choosing, buying, preparing and serving meats have been wasteful of both food value and money. Americans in the main have scorned the animal organs and the cheaper cuts of muscle meat, tasteful and nutritious though these may be made. Many people habitually spurn fat meats. On the other hand, we rush to buy the cuts which include a large proportion of bone and gristle, which represent waste, and we overcook most of our meats! These habits must be corrected if we are to retain the maximum nutritional value from our dwindling national supply of meat.

To begin with, we should start at once to use hearts, livers, kidneys, brains, tongues, sweetbreads and meats high in fat to a greater extent than we have ever done before. We must protect rigidly against waste of the meats we buy, by prompt and adequate refrigeration of stored meats; we must protect against shrinkage by covering the exposed surfaces of meats stored in the refrigerator and by preparing them promptly—within a few hours, if possible, after purchase.

As a safeguard against the possible transmission of trichinosis, the disease which is carried by raw pork, pork must be thoroughly cooked. Pork should reach an internal temperature of 180° F. to provide an adequate margin of safety. This may be obtained by cooking in an oven at 350° F. for thirty minutes to the pound of meat.

With the important exception of pork, which must be thoroughly cooked for safety, most fresh meats can be served rarer than they generally are with advantages of taste as well as nutrition. Overcooking results in shrinkage and loss of vitamins; the volume may be diminished to the point where fewer servings are available, and at the same time each serving has lost some of its nutritious elements.

If meat is fresh, of good quality and moderately tender cut, it should



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certainly be served rare. It should be cut rather thick in order to be juicy rather than dry. Cube steak or minute steak is cut from the sirloin of beef and gashed deeply on one side because the fibers of the meat are not already as tender as in a porterhouse, T-bone or tenderloin steak. The less tender cuts may be ground and made into flat patties, then broiled and served rare. When the fibers of the meat are tough, it may be put through the grinder twice, as for meat balls. Some of the less tender cuts are often pounded, or seasoned flour is pounded into the meat, or the surface is scored with a knife, then floured and seared in hot fat. Pounding appears to be satisfactory with meats that contain a great deal of connective tissue. Flour absorbs and holds moisture; thus the meat seems less dry. Veal is usually breaded with egg and crumbs for the same reason.

Searing has been objected to because it causes too much shrinkage in roasts and does not accomplish the supposed searing of the juices inside the meat. It does have a newer justification, however, in that it raises internal temperature more rapidly and conserves vitamins better. Pot roast, soup bone or diced meat for stew may be cooked in steam instead of water to advantage. To boil meat makes it stringy because it dissolves the gelatinous material between the fibers and lets them fall apart.

Pan drippings should not be allowed to scorch and should be used for gravy. The amount of pan drippings may be excessive if the meat is fat, and they may be strained for salvage. So-called moist heat, formerly recommended for the less tender cuts, has been shown to be of no advantage over oven roasting, although a pressure cooker or pressure saucepan, if available, does give splendid results.

It should be pointed out that spaghetti, rice, bread crumbs and cereal, often used to extend the number of servings of meat, provide much less protein of lower biological value than the meat itself, though they have some practical use. It should also be noted that "ersatz" dishes of beans, peas, lentils and the like, with seasoning of meat extract, onions, or tomato sauce to make them taste something like meat, are foods having a lower biological value than meat itself. They are sometimes referred to as meat substitutes, and they are useful, but one should make certain that milk, eggs and cheese are included in the menu to furnish biological values similar to meat, chicken and fish.

INADEQUATE DIET AND VITAMIN DEFICIENCY

A survey of approximately 400 consecutive patients admitted to the clinic ward of Stanford University Hospital with reference to inadequate diet and signs of vitamin deficiency showed that approximately one fourth had been taking an inadequate diet but the occurrence of clinical signs of vitamin deficiency was very low, Marcus A. Krupp reports in a recent issue of *The Journal of the American Medical Association.* Of those with inadequate diets only 11.4 per cent showed definite signs of vitamin deficiency. Only 2 instances of clinical vitamin deficiency were detected among 297 patients with adequate diets and in the entire group the incidence of definite vitamin deficiency disease was 3.1 per cent. It is said that the survey shows that even with a serious disease, such as cancer, deficiency disease does not readily supervene provided the diet remains adequate.

"Recent surveys of vitamin deficiency disease," Krupp says, "have on the whole shown a disturbingly high incidence. Most of these reports have been made by careful well trained investigators, and the results seem dependable. However, it is important to take into account the locality in which the survey is made, the particular population group and the critera for diagnosis. Some of the statements made in the lay press, on the other hand, must be interpreted with caution, such as those claiming that 50 per cent of the employees in a certain factory in southern California had clearcut evidence of one or more sorts of vitamin deficiency. It is on this account that many more accurate surveys should be made in various parts of the country. . . ."

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KILLED IN ACTION—ON THE FARM

(*Continued from page 259*)

youthful seekers of facts learned and taught the lessons in that Primer. How many farmer workdays are lost in the United States annually on account of accident disabilities? Over 5,000,000. Who are the principal victims of farm accidents? Men, mainly, and children—the latter because they bob up here and there and everywhere in unexpected places, and often their elders are foolhardy in allowing them to ride on and play around machinery and animals. Men who believe they know all about machinery are killed by being jerked into pulleys, by stepping over or catching flapping coattails in running belts, and by cranking engines. What is the most fatal farm machine? The tractor, responsible for one third of all fatal injuries from machinery and for nearly 12 per cent of all fatalities from farm machines. Cornbinders, silage cutters, buzz saws, trucks and combines all take heavy casualties. What accidents happen oftenest with livestock? People are kicked by horses, cows, mules; gored by bulls; attacked by boars and by sows at farrowing time. Why do falls figure so largely? Farmers do a lot of climbing and topple off buildings, loaded wagons, implements, trees and ladders. They must be more careless than other groups! No, but they have always been the forerunners of civilization, forced to battle the hazards of pioneering. Through inheritance, daring has become their habit.

That Kansas Primer, intriguing and informative as it was, would never have accomplished the astonishing results it did except for one thing. It included a contest with awards, county and state. The awards were based on personal achievements in safety work and careful records and reports of them, upon safety leadership in community or school activities, and on the contestant's own personal story of "The Prevention of Accidents and the Conservation of Human Life in My Community." Now there was an opportunity for every boy and girl to show the family something and win a gold watch in the bargain! Complicated, mechanical things and homely, simple ones according to the capabilities of the aspirant were contrived. Why it's necessary to keep a tractor in gear going down steep hills, and why the gas tank musn't be filled when the motor's running or hot. Why an electric cord mustn't be hooked over a nail or bent and tied in knots. Why gasoline mustn't be stored in farm buildings. Why a hay-hoisting rope left outdoors from one season to the next will surely break some day and drop a hayfork on the man below. Why it's criminal to leave a stairway or ladder with one step or rung missing or wobbly; somebody's bound to forget it sooner or later. A great many youngsters must have glowed with the fun of putting knowledge to work. And the family must have listened attentively to those Primer lessons, because at the end of one year farm accident fatalities in Kansas were cut 35 per cent more. Results in farm safety education are clearly measurable; they're no pipe dream of a fireside do-gooder.

More and more agencies are pooling brains, energy and influence to make the farmer safety's remembered man—granges, 4-H clubs, farm and home bureaus, agricultural colleges, farm equipment manufacturers, the Farm Equipment Institute, United States and various State Departments of Agriculture, insurance companies, National Fire Protection Association, American Petroleum Institute, national educational association, health departments, Red Cross and others. Some of them concentrate on the farm work problem alone, although more of course combine this with home, motor vehicle and public accident prevention. Their great clearing house of information is the National Safety Council in Chicago, a nonprofit, cooperative association whose safety services now reach out into every imaginable activity of American life.

Following the Council's first national home and farm safety conference of 1942, New York State was the first to meet the problem as defined and outlined at that time. The groundwork of a truly colossal campaign is now laid in this state.

The war is an impetus to the movement throughout the land—for at least two reasons. It increases agricultural work accident risks enormously, as was pointed out early in the conflict by T. Roy Reid of the United States Department of Agriculture. Older people and the very young are doing farm work, handling machines and livestock, performing tasks for which they are untrained and which they are physically unable to perform, working longer hours with resulting excessive fatigue, the latter in itself the keynote of many accident tragedies. Dangers to these workers are often greater than to those persons working in munitions plants or training in the service. Farm machinery replacements and tires are scarce—even when not downright unobtainable—and this means working with less than enough machinery, with old machinery patched up instead of new, and with old tires on trucks and tractors. There's even a pinch in common hardware like nails and bolts and screws, which can mean the difference between a strong, safe ladder and one that's shaky. And, a situation facing the farm population with far darker grimness than the city dwellers is the shortage of physicians and nurses. There is severely lessened opportunity for prompt and adequate treatment of the injured farmer.

The most impelling reason why the American farmer must be safety's remembered man now is that we need him so desperately. As chief supply officer for United Nations armies everywhere, his foodstuffs feed a battle line which encircles the globe; his livestock furnish leather for the battleboots of soldier millions; his sheep, wool to protect them in icy climes; his cotton fields, surgical dressings to bind their wounds. His products go into the munitions for this world's most stupendous struggle. But a farmer and his crops cannot be defined in relation to the scheme of things. They are the scheme of things. They are fundamental.

Saving Life at Its Source

(Continued from page 255)

the scientific journals and the medical colleges, and its use has been adopted by all up to date obstetricians and pediatricians.

In order to get the full value of this life-saving agent, it has been found advisable to administer it to the mother daily for a month preceding delivery. When this is done the baby is protected from bleeding not only after he has arrived but also during the ordeal of birth. It is customary to give the baby one dose after its arrival, however, in order to make doubly sure.

It is too soon to be able to say with certainty how much the routine use of vitamin K will do to reduce infant mortality when this has become generally accepted practice. Inasmuch as bleeding before, during and after birth is so common, it is fair to believe that the general use of this latest of the vitamins will be the cause of great reduction in our infant mortality.

Why not give vitamin K to "bleeders," those unfortunates whose blood lacks clotting ability, either wholly or in part? Unfortunately for them, hypoprothrombinemia is not the cause of their trouble; hence vitamin K cannot help them. Why not give it to patients about to undergo operation, or to soldiers about to go into battle who will perhaps be wounded, or to workers in hazardous occupations? The blood of these people is already normal in its ability to clot; and vitamin K cannot increase this to a point above normal. We do not need to look for other uses, though there are some forms of bleeding, like that in obstructive jaundice, in which the new vitamin is of value. The main goal—that of reducing bleeding at birth—is so desirable, its attainment would do so much for infant mortality, that we can well afford to concentrate on this.

If all expectant mothers were given vitamin K for a month before delivery and all babies were given a single dose of it immediately after their arrival, bleeding at birth would be reduced to a minimum—to those so badly injured that nothing can save them. This goal is indeed an inspiring one, and the rank and file of American doctors can be trusted to attain it.

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Department of Nutrition

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American Medical Ass'n, 535 N. Dearborn St., Chicago

The Eyes at Work and Play

(Continued from page 253)

general needs of the physical being. If more activity is desired, perhaps the most ideal form of recreation is horseback riding. A wise observation of the great London physician, Sydenham, was that "There is nothing so good for the inside of a man as the outside of a horse." An ordinary day of fishing is both relaxing and restful, but fishing for tarpon and other game fish is an arduous task and sometimes exhausting.

All these things have an important bearing on the preservation of general physical and mental integrity, which in turn exerts a definite influence on the visual organs, because it must be remembered that our best safeguard against local degeneration of the delicate mechanism within the eye is the normal functioning of the general system. We can never lose sight of the fact that the eyes are simply correlated parts of the general physical organism and cannot be considered as entirely separate and independent parts of the body.

If the problem of vision were only a problem of physics, then the difficulties could be easily met and overcome. But often they lie much deeper than the domain of physics and involve the most intricate phases of physiology. It is necessary not only to provide corrections for errors in refraction and obvious muscular abnormalities, but also to supply a normal amount of nervous energy capable of taking command of the physical status and bringing about the vital direction and power so essential to a proper functional efficiency. Without this energizing influence through the general and local nervous systems, the eyes themselves would be only a set of tools without power to perform. They would then constitute a perfect and complete static machine but would lack that dynamic power which is necessary for actual work. They would fulfil every specification in form and measurement, but would fail in the ability to respond to the demands of life as effective organs of vision.

The fundamental difficulty in considering the proper growth and development of the nervous system arises from the fact that we must at the same time deal with the threefold elements of the mind—the intellect, the emotions and the will. The intellect seeks to discover the facts and reasons that should govern action; the emotions embrace the feelings and sentiments which dominate that phase of the mind generally spoken of in figurative language as "heart"; while the will is that feature of the mind which immediately determines action.

The pure operations of the intellect have a quiet and peaceful character and purpose, whereas those of the emotions are scintillating and tempestuous. But when the emotions are carried to an extreme, they keep the nervous system at high tension. They burn themselves out in the furnace of their own fires. They leave the human mind exhausted with convulsive thrills. When the mind is not at work but supposed to be relaxed in play, rest and recreation, the emotions often dominate the scene and are largely responsible for our deeds. The average young person may become the slave of his emotions. The calm processes of reason are in a measure dethroned for the coronation of the heart.

In music, poetry, painting and the dramatic arts, emotions play a major role. All these have a definite use in the general plan of life and are most valuable in a well rounded career, but their influence on the nervous system, when indulged in to an exaggerated extent, must be seriously considered.

The will is always in immediate command of our actions, and it is therefore necessary that it should be trained early and continuously to render its supreme service to the calm dictates of reason, rather than to the effervescing spirit of the emotions. The will, when properly directed, can give us a stable and dependable form of self government, with its beneficent influence over our entire system affecting directly the complex machinery of the eyes.

In the last analysis, moderation is the principle that must reign with equal justice over work and play and thereby preserve the efficiency of this superb and illuminating faculty of vision.

Precautions in the Pool

(Continued from page 257)

A-1 condition. They also know that pre-Army conditioning on their own will make the Army conditioning easier. Those in their forties and fifties feel that it is their patriotic duty to keep themselves physically fit for their civilian jobs in the war effort.

The nationwide physical fitness program has made Mr. Average Citizen stop and take stock of his physical attributes. This all out physical movement is by no means limited to the men. Milady figures heavily in every national program today. Likewise, the attendance in indoor pools this winter is more than 60 per cent women.

Uncle Sam has come to the conclusion that we are in a five ocean war. His boys in khaki and blue will be transported to the corners of the globe via waters. Therefore, every man in our armed forces should be able to swim. This vital teaching cannot wait for the hot summer sun to return, nor can all our military training schools be situated in southern climates; consequently thousands of men are getting their first swimming lessons today in indoor natatoriums from Maine to Washington.

By the simple precautions set forth in this article, indoor swimming can be made pleasant for you. The winter and spring months will become a period of enjoyable training. This will give you an opportunity to relax, improve your health and increase your aquatic talent.

In training and developing national champions, the author has found it necessary to have his proteges practice nine months of the year in indoor pools. Working day after day during all kinds of weather, the champion must be extremely careful not to impair his health or invite sickness. A severe cold has kept national champions from successfully defending their titles. Whether you are a champion or layman, these common sense precautions will go a long way toward guarding your health while you are busily engaged swimming in an indoor pool.

W. L. Sharpe, *New York Central Railroad*

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QUESTIONS AND *Answers*

Cobra Venom

To the Editor:—I have often read and heard stories about cobras. I've heard that in India people may be bitten by a female cobra and they don't die, and also that some people have regular pet cobras, and they play a flute and the cobra dances in front of them. The snake charmer is supposed to crave the snake venom just like dope.

Is it true that people who are bitten by the female cobra don't die, and is it possible for them to crave snake venom like a drug?

R. W., Minnesota.

Answer.—There is probably more misinformation in print concerning reptiles than for any other group of animals, and popular writing has contributed many unauthenticated stories concerning cobras in particular. In part, this is the result of the widespread use of cobras by so-called snake charmers in both Africa and Asia. When alarmed, the cobra assumes a threatening posture, erecting the front part of the body and spreading its hood while it hisses loudly, all in all producing a spectacular effect to the awe of the "charmer's" audience.

The erect position is the normal defense posture of the cobra, but this behavior is utilized by Oriental showmen who play a flutelike instrument while sitting immediately in front of the cobra. The only movements of the cobra are in reality the result of attention focused by the snake on the man, and the cobra shifts its gaze, or sways, following his movements. Careful experiments have shown that a snake does not hear, and the sounds produced by music have no effect on cobras.

Snake venoms differ somewhat from species to species, but in no case has the venom from a male been found to differ from that of a female. Cobra venom produces severe symptoms when injected into the blood stream in sufficiently large quantities, and, of course, bites from cobras frequently cause death. It is possible, however, to inject extremely small doses into animals and gradually to build an immunity reaction in the blood serum. Antibodies are produced that neutralize the harmful effects from subsequent injections of the same poisons. Indeed, antitoxins for cobra venom are made by gradually increasing the quantity of venom injected in horses at intervals and finally drawing off a portion of the animal's blood and removing the red corpuscles. The clear serum, containing the antibodies, is then preserved and may be injected to counteract the effects of bites by cobras of the same or closely related species. In no case, however, is it believed that horses used in the production of antivenins (snakebite serums) develop any craving for the venom, and there is no basis for any belief that human beings would. Indeed, all evidence is to the contrary; in recent years cobra serum has been used in preference to some other drugs to stop pain, because it is not habit forming.

There are poorly authenticated accounts of African natives who attempt to immunize themselves by rubbing mixtures of fat and venom in wounds, but the supposed benefits of such attempts are extremely doubtful. Cobras obtained from showmen or "snake charmers" in India, as well as rattlesnakes used in the Hopi Indian Snake Dance of Arizona, have been examined and prove to be snakes having all functional and reserve fangs removed. It is most probable that such destruction of the snake's venom apparatus or similar measures will, in most cases, account for apparently careless handling of venomous snakes by showmen.

First Aid for Diabetics

To the Editor:—Will you please send me information concerning the care of diabetic employees who might be injured during an air raid?

E. H., Pennsylvania.

Answer.—The care of a diabetic patient injured in an air raid or other catastrophe is based on:

1. Knowledge that he is a diabetic.
2. Care of the diabetes
3. Treatment of local injury

The following suggestions are offered to meet these requirements:

1. Every diabetic employee should have an identification tag, having name and address (or name of firm) on one side and "I am a diabetic" on the other. Some may prefer to have this information tattooed on their bodies. The importance of and difficulties involved in early identification of patients, especially women, in major catastrophes were strongly impressed on doctors, hospital authorities, police and civilian defense personnel in the recent Cocoanut Grove fire in Boston.
2. Hospitalize, at least temporarily, even a case of apparently minor injury, not only for more careful evaluation of the local injury but also to insure satisfactory diabetic control. It is a safe rule to send any diabetic patient who does not feel well to a hospital even in the absence of any evidence of injury, since he may be on the verge of diabetic

coma or insulin reaction and require hospital treatment.

3. Avoid application of any irritating local antiseptic such as tincture of iodine. The application of sterile dressings is adequate emergency treatment for any type of flesh injury. Bleeding, when possible, should be controlled by direct pressure. Tourniquets, especially to a lower extremity, should be used only in case of absolute necessity, because of possible damage to important arteries supplying blood to the part. For the same reason, avoid tight, constricting bandages unless these are essential to control of bleeding.

Old Medicine

To the Editor:—Is it dangerous to keep a medicine over a length of time and then use it?

M. J., Nebraska.

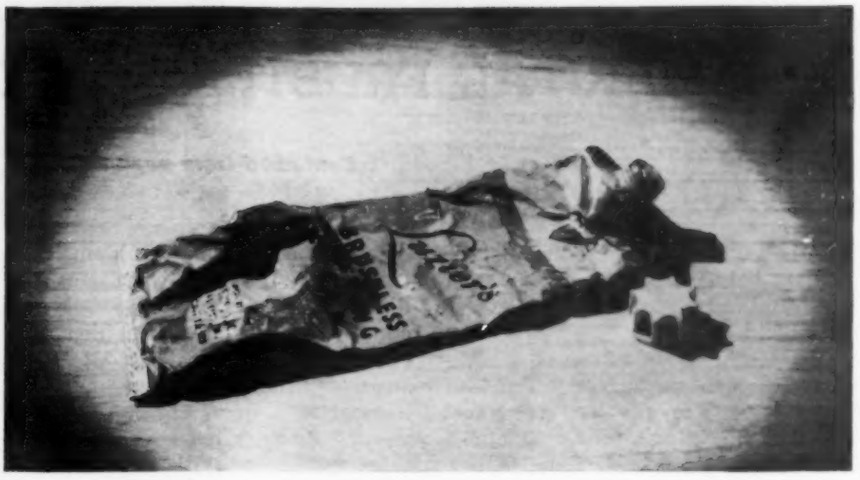
Answer.—It is almost always useless and it may be dangerous to keep a medicine over a length of time and then use it.

Most medicines simply lose their effectiveness with time. Using such a medicine might seem to be without danger though useless. If there are some diseases in which time is the main element and if you rely on medicine which is worthless, you may lose enough time to make the difference between successful treatment and failure or between quick recovery and prolonged illness.

A relatively few medicines may in the course of time become dangerous. An example is tincture of iodine, which loses its alcohol by evaporation and becomes dangerously irritating if it is kept too long.

Another reason for not keeping old medicines and using them again is that symptoms are deceptive. The circumstances which may look to you exactly like previous circumstances for which a given medicine was prescribed may be quite different, and you may be using for one condition a medicine intended for another without consideration of totally different needs.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.



JUST AN OLD METAL TUBE

Who'd have thought a year ago that an old metal tube would be as important as it is today? Remember how we used to throw them away? Come to think of it, we were rather wasteful in more ways than one, weren't we? Today metal is vital; it is needed to produce our implements of Victory — guns, tanks, jeeps, aircraft, munitions . . . — Today you cannot buy a tube of shaving cream or toothpaste without turning in an old tube. When this conservation order was proclaimed there were the usual few persons who griped about it. But then there are always a few *"gripers"* on hand—you know, sourpusses who complain about everything, blame everybody but themselves, and contribute absolutely nothing to the common good. Come to think of it, though, it's perhaps a good thing we have such persons; they serve as a comparison by which we can appreciate the simple greatness, the kindness and ruggedness and good humor of the average American, who uncomplainingly shoulders his country's burdens, jokes about the effect on himself of the rationing of foodstuffs and gasoline and rubber, and has his own unprintable opinion of *Hoarders* and *Gripers* . . . — Funny, but an old metal tube has almost become a symbol of our national character. Every day hundreds of thousands of persons turn in old metal tubes, and in the aggregate these tubes represent a considerable quantity of metal—not only metal in the literal sense, but figuratively the mettle of a people who know that the winning of this war depends on every single one of us contributing his full share, even though it be just an old metal tube.

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MARITAL FRUSTRATION IN WOMEN

(*Continued from page 272*)

influences coming from the outside seldom bring about a permanent or serious hindrance to marriage adjustments.

Conflicts, worries and frustrations disturb various functions of the body. The one we hear most about is digestion. It is a rare person who does not know from experience how surely bad functioning of the digestive system can be charged to psychic experience. It is just the same when our thinking or feeling is the cause of physical incompatibility in marriage. The only difference is in the kind of thinking and feeling that is apt to make trouble.

Young people about to be married should understand what are the most common handicaps to physical adjustment that can be charged to the mind. One of these is fear. It happens also to be a disturbing influence on other functions of the body. Frequently fear explains digestive upsets even to the extent that it is held accountable for a large proportion of stomach ulcers. Fear that makes trouble in marriage may come from a number of wrong ideas. One of these is the expectation that the marital relationship may be painful for the woman. Another is the fear of pregnancy, the husband or wife not being ready for parenthood or exaggerating the ordeal of childbirth because of utterly wrong ideas regarding its dangers.

Another source of trouble may be feelings of guilt or that milder expression of this reaction which we call shame. The origin of this type of obstruction may range from some happening that has substance enough to need attention to the most trivial of misunderstandings. The trouble comes because the person does not feel right toward himself. Therefore his emotional reaction intrudes and interferes with the natural nervous mechanisms that are attempting to carry out their function in the husband-wife relationship. All that may be required to be rid of such a handicap is the same objective thinking about one's own experience that naturally would be given a similar problem confronting a friend. Sometimes the difficulty is more deepseated and complex and may require the counsel of a psychiatrist. It is not strange that the woman who throughout her childhood and youth has been led to regard anything connected with sex as debasing finds more than a wedding ceremony necessary to give her the right attitude toward one of the opportunities that marriage brings her.

The third common psychic cause of trouble is a feeling of inferiority that leads one to make use of any opening presented for the gaining of a sense of superiority. Thus even the physical relationship in marriage becomes a test of dominance. Instead of love having sway there is a self-conscious rivalry. Conscious or unconscious effort is made to defeat the adjustment that the other member of the partnership is trying to make. This type of causation may be more hidden than the others, oftener needing the insight of the psychiatric specialist.

Most of the psychic explanations of physical incompatibility in marriage charge it to fear, guilt or self concern, and the first is much the most common of the three. In any attempt to analyze what seems to be an unsuccessful physical relationship of the husband and wife a word of caution is warranted. As the word adjustment suggests, there is need of experimentation, patience and a period of time for the working out of a mutually satisfying partnership between the newly married husband and wife. It is therefore wrong to suppose that if success is not immediately achieved—although fortunately some are successful from the start—one faces a problem. This wrong idea easily becomes itself a source of anxiety which may prevent an adjustment that would otherwise occur sooner or later. When, therefore, is it sensible to assume that there is a genuine difficulty? If trouble continues for either the wife or the husband for six months after marriage, in spite of their having had an adequate premarital examination, the assistance of some one qualified to give counsel is desirable. This does not mean that the situation is necessarily serious but merely that it should not be continued any longer without greater insight than the two concerned are likely to have.

On the physical side are a multitude of causes that hamper or prevent good marital adjustment in marriage. They may be the misfortune of either the man or the woman, or both of them, but they appear much more frequently among women than men. This is due in part to the greater complexity of the woman's role and also her ignorance about her physical contribution in marriage which many times leads her to neglect conditions that could be remedied if only she would bring them to the attention of the physician. Many young people have come to think that physical causes of marital incompatibility can be charged nearly always to the awkwardness of the husband and in fewer cases of the wife. The word adjustment suggests that the technic has to be cooperative for both the man and woman.

Some of the major causes of physical maladjustment in marriage have nothing to do with technic but are the result of nervous, physiologic or structural conditions. They range over a wide territory. Since they are not matters that a lay person can diagnose for himself, it is more helpful to know that they exist than to attempt to understand them in any detail.

The endocrine glands sometimes through faulty functioning make trouble; the pituitary and the thyroid are two that most often are at fault; an inflamed mucous membrane, such as leukorrhea, a condition not rare among modern women, may make the physical relation painful or unsatisfying. Fortunately, this is something that usually can be easily cleared up or at least greatly improved if only properly treated. Another type of obstruction comes from faulty structure. Except in rare cases this also

is something that can be remedied by the physician or the surgeon. A recent case of marital difficulty was the result of fibroid tumors which had to be removed before there was any possibility of the wife finding physical satisfaction in marriage.

Nervous complications trouble men about as much as they do women. They are likely to be derivatives of psychic handicaps, or a supersensitivity of nerve centers, or both together, so that it is not always clear whether the origin of the trouble is mental or nervous. The effect that fatigue has in lessening physical vigor is important. It is more often the basic cause of dissatisfaction than most overtired people realize.

These illustrations merely disclose the wide territory from which physiologic, nervous or anatomic causation may come to make adequate adjustment in marriage difficult or impossible. As soon as one sees clearly how numerous and complex the causes of physical incompatibility in marriage may be, it becomes impossible to take a fatalistic attitude toward any particular maladjustment. Not only can science get at the roots of the difficulty, but if given opportunity during the early years of marriage, it can almost always remove or change the condition that is defeating adjustment. The sooner treatment is started, the more likely it is that the problem can be solved.

It is best to prevent any needless disturbance, especially in the early months of marriage when adjustment is being achieved. Two recent developments are helping women to get adequate preparation. One is instruction in preparation for marriage. This helps to the degree that it is factual, practical and taught in the spirit of natural science so that the student carries from the course information that helps her to detect trouble when it arises and, best of all, to know how to understand her function as a wife to prevent trouble.

The other contributions come from prominent physicians who have stressed the importance of an examination in preparation for marriage, so that any special problem may be discovered and if possible removed. Dr. Robert L. Dickinson has been one of the foremost advocates of this in our country. It is getting to be more and more customary especially among college women to seek a complete special examination in preparedness for marriage, according to the Dickinson technic preferably at least two weeks before the wedding. This has a far greater purpose than merely to find some special structural defect or physical condition that needs changing. Valuable as it is to discover these when they exist, or as is true in most cases, to have the assurance that there are no such defects, even more useful is the insight the doctor can give so that the adjustment program can be individualized from the very beginning of marriage. Those who are fortunate enough to have had good instruction for marriage and an adequate examination in preparation for the experience are not likely ever to become dissatisfied with marriage.

PREGNANCY TEST HELD UNRELIABLE

The colostrum (the fluid secreted by the breast of a woman a few days before or after childbirth) skin test for pregnancy, announced last year by three University of Illinois College of Medicine physicians, did not appear to offer a valuable diagnostic procedure to Lester M. Goldman, Henry B. Kessler and Mildred E. Wilder, Newark, N. J., in an investigation conducted by them, they report in *The Journal of the American Medical Association*. The test is based on the theory that pregnant women will show no reaction when the substance is injected beneath the skin whereas nonpregnant women, and men as well, will develop a wheal at the site of the injection.

In 500 tests the three Newark investigators say there were approximately 70 per cent correct reactions in all groups, both male and female, tested. They say they find it difficult to explain why their figures vary so widely from those of the University of Illinois physicians who had reported no reaction in 98 per cent of pregnant women and reactions in 96 per cent of nonpregnant women.

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By H. L. Herschensohn. 4 pages. 10 cents.

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WHEN MENTAL ILLNESS STRIKES

(*Continued from page 265*)

others who have the same difficulties which he has and who have the same fears and feelings of failure. He will see some of these patients gradually get back on their feet, and these examples of overcoming difficulties may serve as a stimulating example and give him faith in his ability to be restored to the job.

One of the serious mistakes which the family may make in this situation is to tell the doctor what to do. They find it difficult to distinguish between helping and meddling. While they may somewhat unwillingly accept the truth of the patient's illness, they are less willing, in many cases, to have him enter a mental hospital, and they may insist on giving the patient advice which is contrary to the indicated methods of treatment. The fact that such advice is given with the best of intentions does not detract from its injurious effect. It is natural to feel that a patient throttled by oppressive delusions might be more comfortable under the protective environment of the home, especially when the patient constantly asks to be taken out of the hospital. It is hard to realize that the home may foster the conditions which have aggravated the mental symptoms. Too much protection, misplaced love and solicitude, conflicts between members of the family, financial insecurity, lack of wholesome outlets in work or hobbies, lack of elemental understanding of mental illness all may create within the home an emotional tension which would not be present in the hospital environment. Mental illness has been likened to an iceberg—while a small part is apparent, the larger bulk is beneath the surface!

The mentally sick patient is not nearly as dangerous as he is ordinarily considered to be. There are, however, in some diseases and conditions, definite suicidal tendencies which cannot be met adequately by keeping the patient at home. It is difficult to tell when special precautions should be taken. Some may talk constantly of committing suicide and never make an attempt, while others who never talk about it may commit the act! The patients who really wish to commit suicide may adopt the most wily methods, such as drowning themselves in bathtubs, tipping their chairs over backward, or swallowing forks, broken glass or even clothing. This danger, while not entirely overcome, may be greatly diminished by the careful vigilance of the hospital. Usually, however, the patient will not injure another patient or others working in the hospital. In fact, the patient is more likely to injure some one in the family than some one in the hospital, since the conditions which brought about the illness are most frequently associated with the family relationship.

The accompanying decalogue of "don'ts" will pay the family in coins of comfort and understanding when mental illness strikes. In addition to these rules, one should not attempt to meet this problem in a sentimental way. Don't be a "sob sister." A most difficult experience can be made more tragic by an overemotional attitude.

DON'TS FOR THE FAMILY

1. Don't try to diagnose the illness.
2. Don't try to advise the patient.
3. Don't tell the doctor what to do.
4. Don't blame the patient.
5. Don't interfere with hospital treatment.
6. Don't make excuses to the neighbors.
7. Don't take bad news to the hospitalized patient.
8. Don't look on the illness as a social stigma.
9. Don't separate the patient from his friends.
10. Don't tell him when to leave the hospital.

It is human nature to try to diagnose ills of all kinds. We want to help the sick, and feel that we are aiding by telling just what the trouble is. The most puzzling of all illnesses are mental! Many have no organic basis. The layman finds it hard to conceive of any illness which does not have a physical basis. As a matter of fact, a large proportion of the mentally sick suffer from functional disorders in which there is no discernible organic cause. Another misconception of the layman is that mental illness means a loss or impairment of intelligence. It is hard for Mrs. Smith to acknowledge that her boy, Harry, is mentally ill when he continues to get such high marks in his studies. It is difficult for her to understand that his social maladjustment is expressed on an emotional rather than intellectual level. Some of the most intelligent people become mentally ill and retain their intelligence in spite of their disease! Paradoxical as it may seem, a man may "lose his mind" without losing his intelligence!

Mental illness may grow slowly or develop with abrupt and even dramatic suddenness. The patient may be hilarious, or deeply depressed; he may be talkative, or even mute. He may lose his ability to see, hear, or feel. His mind may become confused, or keenly alert. He may be worried by an imaginary condition, or attach a false importance to a condition that actually exists. He may become highly suggestible, or deeply apathetic. He may adopt peculiar or even bizarre postures or mannerisms, while, on the other hand, he may simply slump down and become unduly passive. Psychiatrists list over twenty major mental diseases, with many subtypes. When one realizes that every person differs widely from every other person and that mental disease becomes superimposed on this pattern of individuality, one can get a glimpse of the myriad forms and manifestations of mental illness. The psychiatrist, who has devoted many years of study to this particular field, is the only one who should attempt to diagnose the disease and prescribe treatment. The family doctor, with his keen and sympathetic understanding of human nature and the particular family setting, may prevent many mild mental disorders.

The patient, often beset by uncertainties and confusion, is approached by many friends who, with all the good will in the world, attempt to tell him what to do. He has faith in these advisers, since

they are his friends, and naturally may be inclined to heed them. They will tell him of their acquaintances who have had similar disorders and how they were cured or made worse by various treatments. It is hard for them to realize the extreme complexity and depth of mental disease. Their best advice would be to insist that the patient confide his troubles to those medical practitioners who have specialized in this difficult field. All factors—the type of mental disease, the age of the patient, the severity of the attack, the economic status—are taken into consideration by the psychiatrist, who is able to take a long range perspective and place the patient where he will receive the most effective treatment. Many families have sacrificed to the point of impoverishment to give treatment in a private hospital to a patient who would have benefited as much had he gone to a public hospital.

Don't blame the patient! One of the early and outmoded concepts of mental illness was that a patient had affronted the gods and was being punished for wrongdoing. While mental hospitals have undergone a significant evolution from sorcery to science, there is still the feeling in some quarters that the public at large owes little to the mentally ill—that they are "reaping what they have sowed." The mentally ill patient is often buffeted between public fear and blame. The family should help the patient to understand that he is not being punished, and that he is a worthy member of the family and society at large. He is thus placed in an atmosphere conducive to his comfort and improvement.

The family most frequently looks on it as a tragedy when one of the members must leave the home and go to a mental hospital. They find it difficult to turn their confused loved ones over to a strange environment. Even when willing to do this, they find it still more difficult to refrain from telling the patient what to do. This advice, again, while given with the best of intentions, may conflict with the ideas of the hospital staff which is trying to bring the patient back to a more healthy contact with reality by substituting new interests and new ideas and creating a new environment which necessarily is different from the home situation. The mother who told her son to be sure to work in the print shop of the hospital did not realize that it was this work in his home town which was a major factor in his mental collapse.

The family must learn to face mental illness as a reality. Frequently they attempt to hide it away from their friends and neighbors, looking upon it as a taint on the family. This would not be so bad if it did not interfere with the patient's morale, which is a most important factor in his chance for improvement. After all, the patient must in most instances come back to the community, and any attempt to hide the fact of illness would make it more difficult for him to readjust on his return. The family must realize in these days that mental illness is a disease, like any physical ailment, and should be accepted as such. Mrs. Williams, who came to the hospital frequently to see her husband, was advised by the psychiatrist to curtail her visits. "Why," she asked, "should I do this, when John looks forward to seeing me?" The psychiatrist explained that she made the common mistake

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of bringing her troubles into the hospital; her husband was usually upset on her departure. She had told him about her gas bills, about Mary's being sick with the measles and John's staying out late at nights, and that there was no one who could take his place in doing the chores in the home. It must be realized that the patient's tolerance is often low, and he is often most suggestible to such discouraging news. Visits, above all, should be cheery if they are to be helpful.

One should be careful in making arrangements for admitting the patient to the hospital. The patient going to the hospital in the custody of an officer of the law may naturally look on necessary confinement as a punishment rather than a course of treatment. Admission procedures vary. Dr. Samuel W. Hamilton, Mental Hospital Adviser to the United States Public Health Service, reminds us: "In Maryland, the certificate of two physicians is sufficient authority for the detention of a mentally ill patient. In Delaware, the application for admission is made directly to the hospital, not to a court. In New York, certain types of cases may be admitted on the certificate of one physician. Various advances have been made toward a more reasonable and therapeutic procedure, but serious reverses of trend have also occurred. The legal formalities having been arranged, the patient usually comes to the hospital in company of a relative, friend, or person with official status. Friends and relatives accompany many patients. The hospitals of sixteen states are notified of a commitment and send one or more members of the nursing staff to bring the patient in. In a very large number of states, even some whose general standards are good, the mass of patients are brought in by a police officer or sheriff, thus forging a link in the chain of parallelism to criminal procedure." The family should see to it, above all, that the patient goes to the hospital in the status and atmosphere of one receiving treatment rather than in the guise of one being apprehended for wrongdoing.

When the patient comes home the family should be careful to avoid separating him from his friends. It must be realized that a puzzling type of illness has, among other things, had a tendency to divorce him from normal associations, and it is the aim of the hospital and the home alike to bring him back to reality. Because of illness, he may naturally prefer a more seclusive type of living and remain aloof from his friends. They and the family should take the initiative in bringing him back to friendliness. Furthermore, any separation from these former contacts might strengthen his feelings of being unworthy and even inferior. As Edith Stern reminds us, it might be advisable to have a party to which a group of selected friends would be invited to welcome his return home. The family must adopt a realistic viewpoint and cannot afford to pamper the patient. He must realize that he has been ill and must re-adjust his life to the realities of the situation. Above all, he should be encouraged in the constructive activities which will help him meet the world in a confident and satisfactory manner.

As the patient improves, it is most natural for him to want to come home. The family may easily mistake many symptoms for the proper signs of sufficient improvement to justify discharge from the hospital. An overly active patient who has become suddenly calm, or a deeply depressed patient who has become alert, may make the family feel that he is well, whereas these changes may indicate the opposite to the trained psychiatrist. The family is likely to believe that their son, who has become clear after going through a period of confusion, is completely well, until the psychiatrist explains that he has simply made a step in improvement. These matters should be left for the determination of medical authorities. Decisions of the family based on sentiment may lead to tragedy.

After all, it is just a matter of common sense to accept mental illness as a disease and seek the competent advice which one would look for in the solution of any scientific problem. In the last analysis, it is a question of a sentimental approach on the basis of family love or a scientific attitude reinforced by medical experience in treating a complex illness. Psychiatry is marching on to higher levels of treatment in which the understanding and feeling of the patient and family are a most vital factor.

Language Problems in Children

By EDWIN M. COLE

HOW DO parents know what their children are thinking? How do children ask for the help they need? The answer to both questions seems simple: by the use of words. The child with a pain says, "Ouch, my stomach!" We use words all the time in our many relationships with our surroundings, and yet we know very little about the mechanics of using words. When a child fails to speak as the average child does, he becomes a great source of concern to his parents. Often the parents do not know where to turn or what to do. Lack of knowledge at such a time is the most distressing part of the problem.

Language, spoken and written, should be considered as the tool that the child uses at work, at rest, at play, in nearly all his activities. Anything which disturbs the smooth action of language disturbs the child out of his comfortable and satisfactory adjustment to his environment.

The mechanics of language includes the saying of words, the hearing and understanding of words said, the seeing and understanding of words printed and the writing of words. This involves an intake and output of words in various forms to which we can apply the term wording. Of course there are thought processes behind our wordings. For instance, the teacher reading a pupil's composition must consider the thought and ideas expressed and the organization of material as well as the words written on paper from the point of view of spelling and meaning. As I use the term, wording applied to a composition involves the legible writing down of words correctly spelled. The ideas involved in the composition, important as they may be, I am not considering here.

Language is the youngest of man's skills. As our ancestors developed from primitive forms, with the growth of a larger and more complicated nervous system, new abilities were acquired. Sense organs became perfected, muscles became specialized in their function and such complicated reactions as standing upright, walking and using hands for grasping became useful to primitive man. Much more recent has been the use of words supplanting acts to help man in his surroundings. It is a fact that the most recently acquired skills are the least secure; hence when the human organism is under attack, speech is the first thing to go. Thus, if we are terribly frightened, we first become speechless and only with an added fright become motionless. Any great or stirring experience is apt to move us beyond words.

In the second place, language is a skill which must be acquired. We are not born talking and understanding words. Along with this self-evident fact is another, that there is tremendous variation among different people in the ability to acquire the skill. This is true of all kinds of learning—no two pupils learn at the same rate of speed, no pupil seems to learn all subjects with equal ease. Finally, this newest and most vulnerable skill is a usurper. Language for its expression has borrowed the use of other organs, the

eyes, the ears, the mouth and various other nerves and muscle groups. None of these organs was created specifically for speech. The original function of the mouth was to take in food, both air and nourishment, and to a certain extent it has been used to defend and fight. Anything which affects the parts of the body that language borrows for its use will affect language. Consequently, in a thorough consideration of speech and reading problems we must give thought to the eyes and to the ears, to the mouth and throat, to various nerves and to the brain.

Speech as learned by the little child is a matter of imitation. The child apparently associates certain sounds with certain experiences. The parent who is trying to train the child to eat, to go to sleep, to be neat and tidy, uses certain simple sounds, often repeated, each sound representing some specific activity. The baby becomes conditioned, then, to certain sounds and at the same time observes that when he, perhaps at first by chance, produces certain sounds they result in activities either pleasant or unpleasant. The baby's cry is, of course, the first and most outstanding example of this. The baby cries, he is lifted up, he is looked after, fed, clothed or given whatever he requires, and we all know how early a baby associates these primitive sounds with achieving his satisfaction. But as the child grows a bit more, and also as he fails to get all his satisfactions by means of crying, he begins to experiment with other sounds, and the clever parent or nurse helps the child by making certain simple sounds, certain monosyllabic sounds which the baby learns to imitate and associates with certain specific functions. Thus the bottle is presented with the word milk, and the baby learns that the bottle may be produced in response to the word milk. This is the beginning of speech.

It is apparent from what has been said that the building up of speech depends on two things: reception of sound and then reproduction of sound. Consequently, difficulty in hearing will result in difficulty in speaking. The most outstanding example of this is the deaf mute. The child doesn't hear sounds. Therefore he fails to associate anything with sounds, and speech is not built up. It is difficult to determine with certainty whether a little baby is deaf or not, and frequently the child grows to be several years old before the family is sure that he is deaf. Such a little child develops an extraordinary ability to observe with the eyes and react to visual stimuli and in this way masks to quite an extent his inability to hear. But I think a more puzzling type of deafness, and probably a far more common type of deafness, is the so-called partial deafness. This type of deafness is puzzling because these children obviously hear sounds. They enjoy listening to the radio, they respond to certain commands, but their hearing is deficient to the extent of 10, 20, 30 or more per cent. Consequently, as greater demands are made on hearing, they are more and more at a disadvantage. Greater demands are made on hearing as language develops. Words become longer, sounds more complicated, and there are fine differentiations in sounds which the partially deaf child does not hear. Again, this condition is deceptive, for a partially deaf child who is bright becomes adept at drawing conclusions from what he does hear and covers up nicely his true deficiency. Such children are usually brought to the language clinic because the teachers complain of their poor speech. Their speech sounds like a form of baby talk, with certain sounds habitually omitted. These children often become shy and seclusive because their attempts at talking are greeted with ridicule by their fellows and often by their families. Not infrequently, well meaning adults use the technic of razzing to force a child to talk better. Razzing may be all right in its place, but it is unwise in this situation, for here a child is required to reproduce sounds which he does not hear at all. It is difficult to plan for such children. There are some excellent institutions for the care of completely deaf children, and yet the child who has only a mild degree of deafness may suffer from a regime planned for those who do not hear at all. He will be subjected to a type of instruction which makes no use of hearing. This, of course, is as unfair to him as instruction which presupposes perfect hearing. What one must do with such children is to develop a keener appreciation in the child for the value of sound, at the same time using every method known to improve his hearing, even to the extent of using a hearing aid. These children frequently neglect to make use of the hearing remaining to them, because sound apparently does not have as much meaning as it does to those who have normal hearing.

The eyes are also on the receptive side of language, and as the child learns to read it is obvious what an important link in the language chain eyesight becomes. Most schools are aware of this link, and I believe that by and large poor eyesight is adequately handled, so I shall not dwell further on it.

Now, just as defective organs of hearing result in poor reception of sound and create language problems, so will defective organs of speech create problems. Perhaps the most striking of these defects is cleft palate. This used to be a great handicap, but with the improvement of operative procedures, recognition of the problem and early treatment, much can be done to overcome this disability. It is not enough, of course, merely to operate on the palate. A good deal of reeducation in the use of the speech apparatus is necessary in order for the child to use his equipment adequately. Children having cleft palate and harelip are usually pretty sensitive of their disability, both from the point of view of appearance and of speech, and much has to be done to give them encouragement. The greatest encouragement, of course, will come through teaching them to talk more satisfactorily.

The brain, through its control of sensation and movement, may justly be called the learning organ. In the use of words, the brain unifies the activities of eyes, ears and mouth into a purposeful result which we recognize as language. The brain is most important as director of the action of otherwise unrelated parts of the body to produce language. Without a certain degree of intelligence all the language processes become impossible. This is a matter of common observation, and it is the cause of an unfortunate situation. Both parents and teachers at times consider the child who does not talk well or read well or understand speech clearly as a mentally retarded or stupid child. To be sure, mental retardation may sometimes be the cause of a child's failure in language, but it

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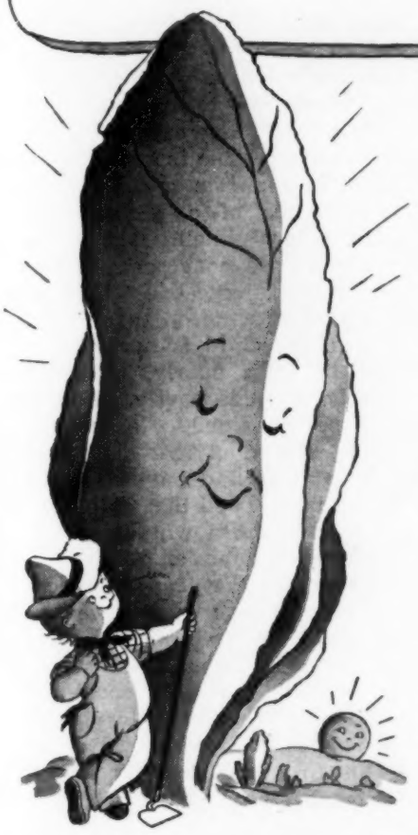

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is more often not the cause. The unfortunate feature is that parents, dreading to learn that their child is retarded, will do nothing about the situation, thus losing valuable time. There are perfectly satisfactory ways of evaluating a child's intelligence. In fact, some types of intelligence tests can be given even before a child enters school. Parents and teachers should refuse to be satisfied with guessing where a child's intelligence is concerned. If the intelligence is good and the language performance is poor, obviously something must be done about it. If tests show intelligence to be below average and hence a possible cause of poor language performance, special training is in order so that the child may make the best possible use of the form of intelligence he has. Intelligence tests are pretty good measures of a child's scholastic possibilities. They are not certain measures of a child's ability to live a happy and useful life. There are forms of intelligence most successful in understanding and working with machinery, in understanding and working with plants or animals or people. These forms of intelligence are not always the type that give a high score in an intelligence test. Nevertheless, the child who makes a consistently poor showing in a series of intelligence tests should not be expected to make a good scholastic showing. It is harmful to him that we should all insist on his achieving success in academic work.

As a result of careful study of the brain in certain pathologic conditions in which language has become affected, we have learned that there are areas of the brain necessary for speaking, for the understanding of words said, for the understanding of words printed, and for their reproduction in written form. More simply, certain parts of the brain must be active in order for us to talk, understand words, read and write. These areas are all in one side of the brain. We speak of it as the dominant cerebral hemisphere. Usually, this is the hemisphere which controls our preferred hand, eye and foot. For instance, the average right-handed person will talk, read and understand with the left side of his brain, just as he uses the left side of his brain to control the movements of his right hand. Furthermore, when the function of one part of the language process, such as speech, is affected, the ability to understand words said and words written also is somewhat affected. We conclude, then, that there is an underlying interrelationship between the different parts of the brain involved in the language process. Where there has been brain injury with a loss of a portion of language, restoration may take place by associating the activity of other parts of the brain involved in language with the part which is lost. This means that if a person has a shock and loses the power of speech, he may be re-educated to talk by practicing through reading, writing and having words said to him.

In a great many cases where children have trouble in the use of language in one form or another, there is evidence of a perfectly good brain as far as intelligence and other reactions are concerned, and perfectly good nerve control and perfectly good sense organs. In other words, the child is normal except that he talks poorly, understands poorly or reads poorly. How may this be explained? In examining large numbers of such cases, I have been able to find but one common denominator, and that is the heredity. In families where there is a mixture of opposite dominance in the heredity, that is, some ancestors having language dominance in the right side of the brain and some in the left side, language skills are apt to be acquired with considerable difficulty. This hereditary mixture of opposite cerebral dominance seems to set the stage for poor performance in language, which usually crops out in one of three forms: first, the child who talks late; second, the child who stutters; and, third, the child who has a reading disability.

The average child usually develops speech at the age of 1 or 2 years. There are children, however, who do not talk at 3, 4 and 5 years of age, though they are not deaf, they seem bright and intelligent and even are able to understand what is said to them. These children are usually brought to the language clinic by worried mothers who realize that the child is about to enter school and who have been told by school authorities that the child cannot come to school until he talks. Sometimes an apprehensive parent seeks advice even before the child is ready to enter school.

Usually, some time between the ages of 3 and 5 the child begins to talk, sometimes with a good deal of baby talk, sometimes in well formed sentences. The ability to talk has developed rather late in such a child—late in relation to his other abilities, for he walked, fed himself and took care of himself as any other child would. These children often develop a useful language of gesticulation coupled with a few sounds which the immediate family learns to interpret, so that the child develops a substitute for normal speech. The mother usually says: "I understand everything he needs. I do not have any trouble at all in taking care of him." Often these mothers gesticulate back to the child, so that there really is little need for language. This, of course, is not the cause of the child's trouble, but is merely an additional handicap which will make it harder than ever for the child to acquire speech. Sometimes an older brother or sister becomes interpreter and travels about with one of these children, even taking him to school and interpreting his wants. It is easy for this unfortunate situation to develop. These children should be taught rather slowly and carefully by exposing them to a simple vocabulary of one syllable words associated with their activities, such as dressing, eating, and the simpler things in home life. Often, coupling these words with signs helps, but the chief point is to repeat again and again certain simple words which it is possible for the child to say and in that way build up a vocabulary. Another important feature of the treatment is to reassure the parents. Having determined that there is no organic disease present and recognizing the case as a simple delay in the development of speech, the doctor may allay the apprehensiveness of parents, for these children end by talking.

Stuttering, or stammering, is a common cause of distress. This disability, in my experience, is not associated with any disease of the organs of speech or of the brain itself. It is not caused by nervousness or fright. It seems to me to be evidence of an inherent difficulty in acquiring the skill of talking. As some children learn to talk late, others learn to talk with a stutter. There are all types of stuttering, from the severe and crippling degree which is practically synony-

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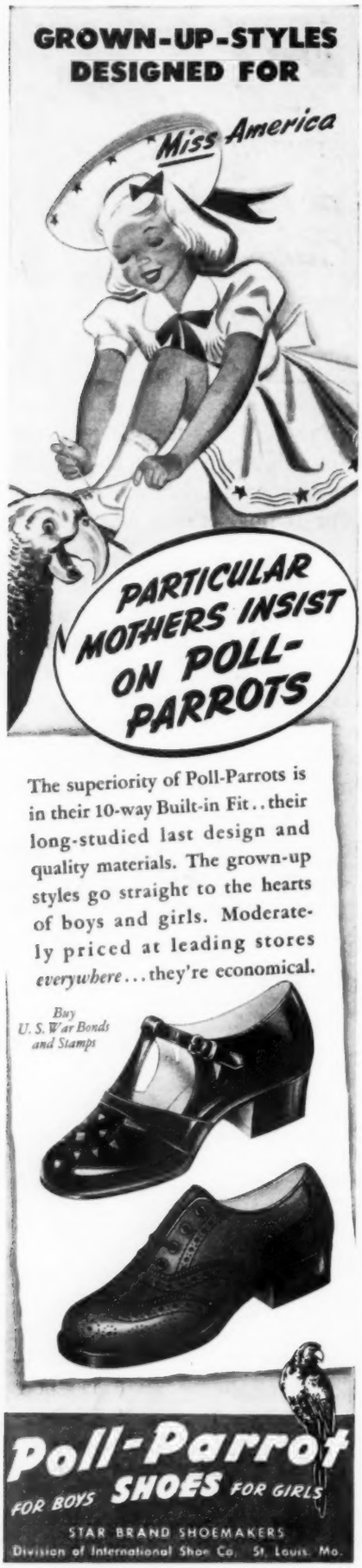
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mous with speechlessness to a slight hesitation which most of us do not recognize. Stuttering is sometimes associated with various tics or facial spasms, or with movements of arms and feet. It usually occurs in early childhood, even before the child goes to school, though it most frequently becomes severe when the child goes to school. Less commonly, stuttering becomes severe at adolescence or even later, but I think in these cases there always has been some stuttering in early childhood.

Stuttering often becomes a source of great unhappiness and discontent. Recently, I saw a woman who described her own experience. As a little child in Europe, she received daily canings from the school mistress, who thought in this way to make her less wilful and to teach her to speak properly. The child had a severe type of stutter, and of course it was impossible for her to produce normal speech. The unenlightened teacher felt her speechlessness was evidence of stupidity. With daily canings, spending most of the day standing in the corner of the classroom, she learned little. At the age of 10, she moved with her family to America, and she vividly remembers entering kindergarten at 10, a big, hulking girl who never raised her eyes to look at any one. She remembers playing in the street and hearing the other children telling her to "Run along, dumbbell." The clarity of her memories and their painfulness even at the present time give evidence of the unhappiness that her disability caused her. "To this day," she says, "I am unable to talk with comfort, and I have always felt inferior and apologetic, even when I do not stutter." I have no doubt that her unfortunate experience has conditioned her life. This story can be duplicated by hundreds of others. The stutterer who grows up with nothing being done to help him loses the valuable experience of expressing his ideas verbally. He becomes inarticulate, and by the time he is grown up it is practically impossible to make up for this shortage of experience in using speech. Some people compensate for their difficulty more easily than others.

It is not always easy to overcome stuttering. The ideal time for treatment is early in life. It is impossible to generalize about all stutterers, for various methods of treatment have proved helpful. It is necessary to re-educate all these individuals in speech. This can be done through association of speech with such things as reading, singing and various exercises. This is never quickly and simply done. There certainly is no charm or pill which will produce a cure; the attitude that here is a handicap which now must be dealt with is most important. This attitude can be fostered by the parents. The usual attitude, unfortunately, may be expressed about like this: "Now, I have come to see you about my little boy who stutters. He doesn't know that we are talking about stuttering, and I don't want him to be made self conscious about it because this is a terrible thing and we just won't mention it, will we doctor? I don't want him to be embarrassed." This attitude is terribly unfortunate. The child is always aware that he stutters. He is aware of his parents' embarrassment for him, and consequently he becomes embarrassed and develops all sorts of feelings of inferiority. It is as though we took a little, nearsighted child to an oculist and asked him not to look in the eyes and by no means to give him glasses because the child might become aware of the fact that his eyesight is poor! Of course he has to know his eyesight is poor, and of course he has to learn that something can be done about it. Again, it is a case of making the best possible use of the equipment we have, and this is never truer than in the field of speech.

Another interesting type of language disturbance is known as reading disability. This condition has been written about in magazines and talked about at Parent-Teacher meetings. It is extraordinary, however, how many children we see who have been mishandled because the problem is not understood. Frequently, parents are unwilling to accept the fact that the child is stupid and that he must stay in the ungraded class, or the opportunity class, or the special class, or whatever it is called. When I speak of reading disabilities I am talking of bright children with perfectly good eyesight who learn perfectly well where printed material is not involved. They are apt to be very good in arithmetic and to learn excellently through the ears, but when it comes to learning reading

and spelling they make absolutely no progress. The clever teacher should be aware of this fact in the first or second grade. Intelligent parents should recognize the fact that the child does well in certain subjects but makes absolutely no progress in others. Parents should keep themselves informed of the progress or lack of progress their children are making in school.

A 19 year old boy who came to our clinic had spent years in ungraded classes with children who had inadequate intelligence and for one reason or another were unable to move along with their contemporaries. He was a large boy for his age, and he never seemed to be able to learn to read. As he progressed in school, more and more information came out of books; consequently, he lacked more and more information. Even arithmetic, in which at first he was successful, became a closed book to him as more and more of the work depended on the reading of problems. I remember his saying to me, at 19, "You have no idea how terrible it is to stand on the street corner with a gang and have some one point to the movie billboard across the street and ask if I had seen the show. I couldn't tell them I couldn't read the titles, and yet I couldn't, so what could I do?" Again, I remember two distressed parents who came to me saying: "Our boy has been at the best private school in Boston. He is now finishing the sixth grade there, and that is as far as that school goes. But the school principal tells us that she cannot give him a diploma, because he cannot read. We know he cannot read, but what are we going to do? He is one of the best boys in his class in arithmetic, and where will we send him if he cannot get a diploma?" This was an unfortunate case of prolonged waiting. The principal of the school had known the boy was not doing well in reading but she had hoped he would learn "next year." Nothing was done. This boy was extremely intelligent. His record in a careful mental test was one of the best I have ever found, yet as he was completing the sixth grade, he was able to read at only about a third-grade level and to spell at about second-grade level, though his mathematics was at ninth-grade level. Obviously, this discrepancy in performance could not have been due to stupidity or laziness or wilful neglect of studies. Obviously, it should have caused the teachers to wonder and to do something about it, and obviously the parents should have paid attention to what was going on and questioned the school about reports. They should not have sat back and said: "Well, we are paying the best school in Boston to educate our boy. Therefore, we are discharging our obligations adequately." When a boy has gone to school for years and has been unable to learn what others seem to learn easily, he loses the habit of trying. He never tastes success. He has to misbehave to get attention, for he can get it no other way, and all sorts of behavior problems develop as a consequence. When a boy reaches 19 with a reading level at about the fifth grade it is difficult to handle the situation properly, but of course the problem should have been handled long before.

Errors in handling language disturbances can do a tremendous amount of harm. Nothing will blunt the learning process more than failure to succeed. Nothing will create greater emotional problems than being forced to do that which we do poorly. The world sets great store by smooth talk and fast reading. It's nice to be gifted in these ways, but many of us are not, and it is these many whom we must learn to handle wisely and helpfully as teachers and parents. The first step to wise handling is to know what we are dealing with. Consequently, we must become intolerant of the attitude: "Let's wait and see how he does next year." We must always question ourselves when we decide that Johnny is just a lazy boy, one of those children who doesn't want to learn to read, an uncooperative child. I doubt that children are born disobedient or lazy or uncooperative. Those are reactions learned by the nervous system just as talking and reading are learned by the nervous system. At least half the battle is won when we recognize that success in language and high intelligence are not synonymous, that the average amount of instruction is not enough for some highly intelligent children who have this inborn lack of ability to acquire linguistic skills, and that, therefore, some children need twice as much effort, or ten times as much effort, expended on them.

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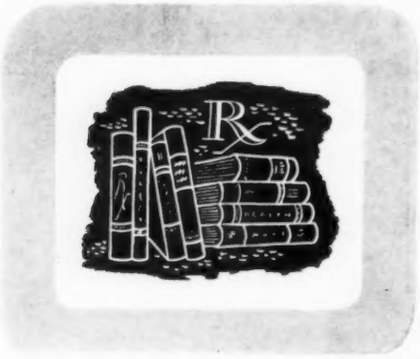

Books ON HEALTH

Good Nutrition for Everybody

By Jean L. Bogert, Ph.D. Cloth. Price, $1.50. Pp. 165. Chicago: The University of Chicago Press. 1942.

All the layman really needs to know about calories, proteins, vitamins and minerals is in this little book. The reader is not confused by scientific terms or loaded down with numerical values. A few basic principles for an adequate diet under various conditions and incomes are set down. They are easy to grasp and not difficult to remember. Numerous sample menus illustrate their use. Forty pages are devoted to nutritious, easy to prepare, low cost recipes for many of the dishes in the menus.

The author is conservative and scientifically correct in every instance except in the recommendation of mineral oil mayonnaise for those on weight reducing diets. It is now generally agreed that mineral oil with a meal interferes with the absorption of certain vitamins through the intestinal wall. Mineral oil should, therefore, not be taken in any form at mealtime.

At present every homemaker is confronted with the necessity of changing her customary diet because of the limited number of foods on the market. It is natural to worry about the maintenance of good nutrition in such circumstances. Not only will the housewife find this book enlightening, but the recipes will give her new zest in preparing the now available foods.

BARBARA FISHBEIN FRIEDELL.

Mental Illness: A Guide for the Family

By Edith M. Stern in collaboration with Samuel W. Hamilton, M.D. Cloth. Price, $1.00. Pp. 134. New York: The Commonwealth Fund. 1942.

This little book is an exceptionally useful and timely contribution to the available literature on health education. Simply and popularly written, it goes far to dispel ancient superstitions and misinformation which still impair the thinking of most persons about mental disease.

The approach is practical, beginning with a chapter outlining a healthy attitude toward mental illness followed by one on what to do and what not to do when mental illness strikes in your family. Subsequent chapters are best described by their titles, "Why Hospitalize," "Private or Public Hospital?", "Getting the Patient Admitted," "Taking the Patient to the Hospital," "Leaving the Patient at the Hospital," "The First Month in the Hospital," "The Hospital World," "Life in a Mental Hospital"; then follows a chapter on some treatments for mental illness such as psychotherapy, physiotherapy, hypnosis, shock and fever therapy. The relationship of the family to the mental hospital is next dealt with, including such important matters as letters and visits. Discharge from the hospital and situations faced when the patients return home are then discussed. Permanence of recovery, continued care and a plea for the prevention of mental illness through organized effort round out the book. There are some appendices giving information about the character of state institutions and listing national and state mental hygiene societies and committees. There is a good glossary, but no index, though the latter appears not to be needed.

Because of its brevity, its friendliness and its understanding treatment of the problems faced by relatives of the mentally ill, this book should be not only a guide and a help, it should be a great comfort.

W. W. BAUER, M.D.

Psychologic Care During Infancy and Childhood

By Ruth Morris Bakwin, B.A., M.A., M.D. and Harry Bakwin, B.S., M.D. Cloth. Price, $3.50. Pp. 317. New York: D. Appleton-Century Company, 1942.

The authors of this book present much valuable observation and many helpful suggestions for the care of infants and children. Their emphasis on the responsibility of the pediatrician for the mental health of the child and their effort to help him in this function call for much appreciation. A number of considerations, however, limit the usefulness of the book. An account of the emotional and social development of the child is not given in a sufficiently succinct and consistent form as to give the reader a clear conception of the mental life of the child. The material presented is poorly organized and very uneven in quality and emphasis. The authors remain at a purely descriptive level and rarely venture comment on underlying psychologic determinants of disturbances except in most general terms.

To avoid confusion for the student of medicine or the pediatrician, clear cut distinctions must be made between those disturbances manifested by children that can be recognized as due to physical or environmental factors expressing themselves in disturbances in training and those difficulties dependent on neurotic disturbance or personality difficulties in the parents. Whether or not neurotic disturbance in the personality of the child is encountered is also of fundamental import. While the authors wish, properly, to emphasize normal growth and development, their discussions necessarily carry over into psychopathology. A clear cut statement of the nature of neurosis and how it tends

to limit the function of the pediatrician in the field of mental health would do much to orient the pediatrician and clarify the problem of treatment. Pediatricians are becoming excellent mental hygienists, but in so doing they approach more closely the problems requiring psychiatric training and psychotherapeutic approaches. This important consideration is not adequately dealt with in the Bakwins' book.

An excellent foreword by Lawrence Frank, bibliography and indices add to the work.

GEORGE J. MOHR, M.D.

Opportunities for the Preparation of Teachers in Health Education

A survey of Twenty Teachers Colleges, by Earl E. Kleinschmidt, M.D., Dr. Ph. Bulletin 1942, No. 1. Published by U. S. Office of Education, U. S. Government Printing Office, Washington, D. C., 1942. 20c. For sale by the Superintendent of Documents, Washington, D. C.

This compilation is a listing of courses available in teachers' colleges and normal schools which will help to prepare the undergraduate student in education for better understanding of health education and which will help to equip him with subject matter and technics for teaching about health. Accompanying the compilations of opportunities available are some more or less standard comments on the importance of health education, the inadequacy of the school administrator or teacher, or both, in this field and recommendations for more and better opportunities for the teacher, both as undergraduate and graduate student. W. W. B.

Stretching Your Dollar in Wartime

By Ruth Brindze. Cloth. Price, $1.75. Pp. 197. New York: Vanguard Press Inc., 1942.

This book is useful in the rationing campaign. It covers food, clothing, household goods, home maintenance and motor cars and takes adequate account of the health needs of the situation. M. F.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

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The Commonwealth Fund, 41 East 57th Street, New York City.
The University of Chicago Press, 5750 Ellis Avenue, Chicago, Illinois.
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WOMEN AT WORK

(Continued from page 262)

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4. Good records of all cases of absence from work as a guide to the establishment of preventative measures.

Consulting services in industries commonly include dermatologists, ophthalmologists, surgeons, internists, neurologists, neurosurgeons, psychiatrists and other generally recognized medical specialists. The Committee recommends that competent gynecologic and obstetric consultants be included wherever a substantial number of women are employed.

GENERAL HYGIENE FOR WOMEN IN INDUSTRY

Ordinary industrial hygiene activity, safety practice and medical or engineering control over conditions of work apply to men and women alike. However, additional safeguards have been set up as supplementary protection for the health of women. Physicians called on to exercise supervision over employed groups should familiarize themselves with all applicable statutes or health codes. The Committee emphasizes the following special considerations:

(*a*) *Type of Work.*—Generally women work at home in addition to a regular shift in the plant. The wife and more especially the mother may be engaged as many hours at housework as in industry. Such excessive burdens are undesirable, especially during pregnancy. Since rest is difficult in the home during the day, mothers should work either during the day or afternoon shifts.

Women have been employed successfully by many industries and are particularly suitable where manual dexterity is involved. This applies to work in the assembly lines, with small drills, with punch presses, at mailing and filing, in the preparation of food, in textile or weaving industries, in small arms plants and in many other war industries. Lifting, pulling, carrying or shifting weights should not be beyond a reasonable and comfortable capacity for the person concerned. The maximum units for weight lifting probably should not exceed 35 pounds. Weight factors should be lower for the pregnant woman and also for older women.

(*b*) *Working Garments and Equipment.*—The woman worker should have the same clothing protections as the man. Slacks may be preferable to skirts in certain types of work. Blouses with long, dangling sleeves may be dangerous about machinery. It is equally important that appropriate garments and protection be afforded to those exposed to adverse or extreme temperatures. The customary protection for the eyes, hands and the hair is self evident. In general, women should use low heeled, comfortable shoes; this is most important for the pregnant woman.

(*c*) *Optimum Hours of Work.*—The maximum number of hours of employment for women has been established in many localities. The nature of the work as well as the urgency of the situation may influence somewhat the number of hours they are employed per day or per week. Ordinarily, women may be employed from 36 to 48 hours a week, depending on the local statutes, the type of work and the individual's capacity.

(*d*) *Industrial Sanitation.*—The standards for adequate lighting and ventilation are equally applicable. An adequate number of toilets and lavatories properly maintained and reasonably accessible constitutes part of the necessary rules of good hygiene. Rest rooms where pregnant, menstruating or ill women may rest or recline should be provided. Rest periods are desirable and may be conducive to more production—even on piece work.

(*e*) *Supervision and Matron Service.*—Adequate supervision at the plant is necessary, particularly by foremen or forewomen trained or experienced in the supervision of women employees. The management of any plant not accustomed to the employment of women would do well indeed to consult plant physicians and others experienced in the problems of women employees before employing women. Even the placement of women in another division in the same plant may bring about new problems. A matron or "councilor service" has been found unusually successful in several large plants where a large number of women are employed.

The evaluation of movement and monotonous work is one of the problems of the plant physician. Constant sitting or prolonged standing is more disturbing to the pregnant patient. Adjustments should be made in such a fashion that the employee does not work in a strained position at the benches, tables and machines.

TRANSPORTATION

Transportation of women to and from work may be even more difficult than that of men. Adequate protections and shelters should be afforded women between their transportation system and their place of employment.

PHYSICAL EXAMINATION

(*a*) *General Recommendations.*—The general recommendations developed by the Council on Industrial Health apply. These are:

Pre-placement physical examinations should be complete. They should be used only for the purpose of assigning work adjusted to the

physical and temperamental fitness of the applicant and to maintain safe and healthful employment for all employees.

Subsequent physical examinations should be complete enough to provide positive health protection for all workers and to safeguard public welfare. Repetition of such physical examinations must be determined by the physician in accordance with specific requirements.

In the interest of uniformity, physical examination forms are recommended. Personal records of this character are confidential and should be kept in the custody of the medical department. Access to these records should be granted only on request or consent of the examinee.

The examining physician should acquaint the examinee with the results of all examinations or take steps to refer all conditions requiring correction to the physician of the worker's choice.

(*b*) *Obstetric and Gynecologic Recommendations.*—At the time of the regular examination and history, special inquiry should be made about the breasts and obstetric and pelvic conditions. From the obstetric and gynecologic point of view this opportunity is too good to be missed for as thorough an evaluation of these systems as is possible.

A thorough examination of the breasts or any of the pelvic organs may reveal an early but a serious lesion. On the other hand, the examination may reveal a condition which should be reexamined at regular intervals as a safety measure to the employee.

A thorough pre-employment evaluation of the pelvic organs will permit better placement of the employee as well as the discovery of early significant and serious disease or altered physiologic states which are still subject to correction.

Individuals with relaxation of the pelvic structures should be placed in work where the stress and strain of lifting or the prolonged effect of gravity can be avoided.

Pregnant or lactating women, as well as those concerned with sterility or habitual abortion, should be particularly protected against lead, mercury, arsenic, phosphorus, solvents, benzol and homologues, volatile oils, nitrobenzene and explosives, x-ray, radium and other dangerous agents. Any substances or agents which might injure the liver or kidney may precipitate extremely serious complications during pregnancy or in relation to pregnancy and lactation. Women who have had toxemia in previous pregnancies or difficulty in fertility or carrying a pregnancy should avoid employment during pregnancy.

MENSTRUATION

Many women have little or no incapacitation during menstruation. Those with mild distress may be benefited by dietary improvement, by the avoidance of unnecessary strenuous physical activities for a few days prior to the expected period or by the administration of mild sedatives and analgesics under the direction of the plant physician or the employee's physician.

Severe cases of painful menstruation may require the attention of the specialist. Dysmenorrhea is a symptom, and it may result from many conditions. Adequate rest facilities at the plant are desirable, and a brief rest may cause only a slight interruption in the day's work rather than a loss of several hours. Hot applications to the lower abdomen or back may be helpful. Stimulants such as coffee, tea or other hot drinks are some times beneficial.

For those who must lose one or two days regularly because they have not been relieved of their dysmenorrhea, it might be desirable if sufficient flexibility in their employment could be arranged so that an extra day could be worked on one or two weeks prior to the menstrual period. Thus the woman would not be penalized because of her menstrual distress. In a few instances, efficiency may be so greatly lowered

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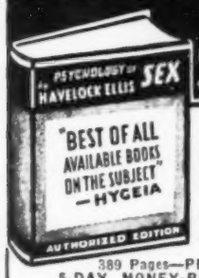

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at the time of the menstrual period that the woman should not work. If flexibility in employment in these instances could be arranged, there would be more efficient and better production.

A change in climate or altitude may be associated with an increase in menstrual distress or complication. Likewise, positions of responsibility, tension or worry may be associated with altered menstrual action. On the other hand, menstrual irregularities or disorders may be the first symptom of cancer or tumor. Thus careful consideration should be given to all complaints and appropriate investigation made by the employee's physician or obstetrician.

MENOPAUSE

Because of nervous and vasomotor instabilities, increased excitability and increased susceptibility to fatigue, women in the climacteric may need special consideration. Estrogenic therapy or sedatives may be extremely beneficial, particularly where there is disturbing noise, excitement, tension, or maladjustment to employment, to associated workers, to supervisors or to environment. The menopausal symptoms are not caused by employment, hence their treatment is not primarily an industrial problem.

PREGNANCY

(*a*) *Normal Pregnancy.*—Normal pregnant women are encouraged to have reasonable activity, but when employment is necessary the usual prescribed activities should be discontinued. Employment is common practice in the first half of pregnancy or perhaps longer, depending on the individual's physical tolerance to the type of work. Each pregnant employee should have individual consideration by her obstetrician and by the plant physician as to the hours and duration of the employment, as well as the type of employment.

As the pregnancy advances beyond the twentieth to twenty-fourth week of gestation, the individual becomes progressively more awkward and thus must avoid all climbing and all walking where delicate balance is involved.

Pregnant women should have a regular shift of employment in order that their lives may be regulated for the greatest amount of rest and regular sleep. If the employment is improper or the patient cannot physically tolerate the work, the patient must stop work or be shifted to some other division in the plant.

(*b*) *Leave for Pregnancy and Childbirth.*—The pregnant employee should not be employed after the thirty-fourth week of pregnancy (that is, within six weeks of term). It is believed that the discontinuance of employment in the last three months would benefit many prospective mothers, if economic protection can be had during this period.

It is recommended that each employee inform the proper authority in the industry of her pregnant state within the first three months, that she obtain a statement from her physician to the effect (1) that her pregnancy does not contraindicate her working, and (2) that she may work not longer than a given period of pregnancy. If contraindications to work arise, the employee's physician should notify the employer.

The patient should not return to work until six weeks after delivery and then only when her physician notifies the employer that she may return. If her return to work at six weeks is inadvisable because of her condition or because her baby actually needs her at home, then she should request a further extension of time.

(*c*) *Prenatal Care.*—Every pregnant woman should seek the advice of her physician or obstetrician in the first three months of pregnancy. For the best interest of the patient, her own physician or obstetrician and gynecologist should administer all prenatal and obstetric care. In case of emergency, medical

attention should be obtained from the nearest available source.

Prenatal care consists of a complete history, physical examination, pelvic examination, pelvic measurement, serologic blood test for syphilis, hemoglobin test, urinalysis and blood pressure recording. Ordinarily, return visits need not be oftener than once every three weeks until the thirty-second week of pregnancy, then every two weeks until the thirty-sixth week, after which weekly visits may be required. A urine specimen must be left with each visit, blood pressure must be taken, and the weight recorded. In the last month or so of pregnancy, it is good practice occasionally to note the position and size of the fetus.

(*d*) *Complications.*—Unintentional abortion is the most likely obstetric complication in the first three months of pregnancy, and it may have no relationship to the employment. These accidental abortions result perhaps more often from abnormal or diseased ovum and not because of the work or activity. Excessive vomiting is the second most likely problem in the first three months. The last three months are complicated most often by toxemia of pregnancy, malposition or premature detachment of the placenta. All these conditions are incompatible with employment of any kind and need immediate treatment.

The middle three months is a comparatively safe period but any complication may arise at this time, as well as earlier or later, such as anemia, hyperthyroidism, diabetes, tuberculosis, syphilis, gonorrhea, cardiac disease, hypertension and nephritis, pyelitis, tumors and many other conditions.

Other complications will also alter the program. Genital tract infections may require treatment from every two to seven days. Antisyphilis treatment should be weekly. The management of medical complications will necessitate a specially devised program. In the event of excessive weight gain or evidence of toxemia, special instructions must be given. These are only some of the conditions that the obstetrician may encounter in the care of his patients.

LACTATION

Unless special facilities are available, it is unsatisfactory or impossible for nursing mothers to work and continue to nurse their babies. If sufficient facilities are arranged to care for the baby, ample time must be allowed for nursing and for the patient to obtain food and fluid. The employer should have a statement from the employee's physician prior to employment of a nursing mother that there is no medical reason contraindicating employment.

CARE OF CHILDREN OF MOTHERS IN INDUSTRY

If mothers are employed, adequate arrangements must be made to provide suitable facilities and properly trained personnel to care for their children safely. Such care will depend on the size and age of children and the hours of the mother's employment. Infants will require a different type of attention than older children well along in school. Children attending school will need adequate supervision before and after school hours for the assurance of adequate diet, proper clothing and other protections until the mother can take over the responsibility. Special studies of this problem must be taken in each area where such social problems arise.

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Fit to Fight

(Continued from page 267)

men with eyes below these standards, but not worse than 20/400 in each eye correctable to 20/40 with glasses, is permitted for limited military service. Men who are blind in one eye, provided the other is not worse than 20/100 correctable to 20/20, are also accepted for limited service.

The section on ears has undergone somewhat similar, if less radical, liberalization. The first orders did not permit the induction of a man with hearing worse than 10/20. (An ear that can hear clearly words spoken in a low, conversational voice at a distance of 20 feet has a hearing of 20/20. The words can be heard from a distance of 10 feet by the 10/20 ear.)

Then the Army began taking men for limited service with a range down to 5/20, and men who were deaf in one ear if they had 10/20 hearing in the other.

Lt. Col. E. Mann Hartlett, the physician who is the medical officer for Selective Service in Illinois, has announced that it will be necessary to conduct re-examinations, at the draft board level, of nearly all men previously rejected for tuberculosis in accordance with new Army standards concerning this disease. The Army has redefined the upper areal limits of calcified lesions of tuberculosis which apparently are healed in order to permit the induction of men with a limited number and areal extent of such lesions.

The great major change in the standards was the decision last summer to begin taking the limited service men. This permitted the induction of men who were overweight, those with moderate hay fever, men with moderate absences of fingers and deformities of the extremities that had not disabled them for useful civilian occupations, selectees with one kidney removed or a floating kidney, and other similar static defects which the Army physicians could be more than reasonably sure would not become progressively worse.

There is no provision for limited service men with such defects as tuberculosis, cardiovascular involvements and diseases of the blood and blood-forming tissues. Men with any defect in these groups which unfits them for general military service are not wanted by the Army to serve in any capacity.

In some instances the later standards have undertaken to warn physicians recently drawn from civilian life of certain aspects of disease that may not hinder a man too much in civilian life but that do disqualify him for military service. The original standards merely stated that a man with acne, for example, would be accepted for general military service. The last Army orders carry this warning on acne:

"Care must be taken to exclude individuals with chronic severe acne, particularly when the face is involved to the extent of being markedly disfiguring or the shoulders extensively involved, making it likely to be aggravated by shoulder straps of packs or other military equipment."

The list of defects which bar a man from Army service is long, but it is necessary in order that we may have an Army with quality as well as one of the necessary quantity. Neither the draft boards nor any one else except an appointed physician is permitted to decide that a man is qualified or disqualified for military service on mental or physical grounds.

All selectees are given a screening test for gross defects by volunteer civilian physicians serving the draft boards. Those who pass this examination are passed on by Army doctors at Army induction stations. Men considered doubtful by the draft board medical examiners are passed on for examination at induction stations because only the Army physicians are permitted to make final rulings in these cases and those others not eliminated by the draft board doctors.

Wallace Kirkland

School in Hospital

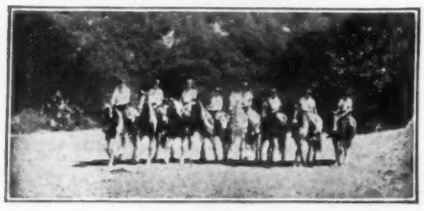
By FRANK L. BEALS

WHEN a child enters a hospital the experience is likely to be an upsetting one for him. His distress, however, is somewhat alleviated when he finds that he can keep up with his classmates in school, that he will not fall behind or fail in his school subjects. The fact that school is interested in him while he is in the hospital gives him a sense of security, a feeling of courage.

When he enters the hospital the child is in strange surroundings, with strange people. But a teacher, even though he has never seen her before, is no stranger. Teacher and school materials are acquaintances with whom he feels at home.

In Chicago alone some five hundred children are in hospitals and convalescent homes. Most of them are there because of crippling conditions or chronic diseases. Many of them remain for long periods of time. The Chicago Board of Education maintains a school in each of twelve large hospitals. That is, the Board of Education furnishes teachers, necessary books and materials for instruction. For five hours of each school day the children are in school. They are not assembled in classrooms, to be sure. Many of them are confined to their beds, some are in wheel chairs, and still others are on crutches, but if they are able to participate in study, work or play they enjoy as nearly as possible a normal school situation. The continuance of the development of good study habits and

Schools and Camps



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school progress become welcome accompaniments to physical restoration. School activities become a basis for cooperative work on the part of student, teacher and physician.

It is well known that the mental attitudes of patients in hospitals have a powerful influence which may either hasten or retard recovery. Depression is inevitable if patients worry and brood. Young people who are cheerful and hopeful, who feel that they are a part of the general program and enter heartily into the work of recovery, have a better chance to succeed than those who have nothing to do and are discouraged.

The hospital school has three main objectives: to keep the patient in a cheerful atmosphere, doing work he knows it is his business to do; to continue the development of good study habits so that he will lose no time when he returns to his home school; and to help him maintain normal academic progress. No child, sick or well, wants to fall behind in his class.

Membership in hospital schools is made up of three types of patients: those confined to bed, those in wheel chairs and those who may be up. In one institution which provides care for children with heart deficiencies, teachers meet those confined to bed exclusively. In nine hospitals there is a combination of all of the kinds of patients mentioned. Of the total membership of elementary and high school pupils, 78 per cent are bed patients; 22 per cent are wheel chair and ambulatory children whom teachers meet in classrooms.

Those hospitals which specialize in the care of chronic diseases provide special classrooms with a variety of desk and seating arrangements to insure comfort for each student. Some patients require high-seated chairs, others remain in wheel chairs, and a few work at tables of varying heights. The classrooms are particularly pleasant in color and design, well lighted and equipped with modern, movable furniture.

There are those who believe that hospital schools exist for the young people who attend schools for crippled children. The records reveal that the greater number of student patients come from the regular schools. In all work with physically handicapped children, teachers consider the abilities of the individual rather than his disability. Educators work with what ability the child has left as a result of physical disability.

When a child is to remain in a hospital four or five months and the physician recommends that he may engage in a full school program, the teacher plans, insofar as may be practicable, normal school progress. Treatments and illness cut down the time normally given to study. Therefore the amount of school activity must be adjusted to meet the individual's limitations as to time and physical ability.

The many children who each year begin their school life in the hospital constitute a real challenge to educators. Most of them have long looked forward to and eagerly anticipated entering school and meeting other young companions. Instead they find themselves in hospitals. To cheer these beginners, to learn their difficulties and needs and to introduce them successfully to school routine calls for exceptional teachers.

New reading materials, beautifully illustrated charts, art materials, toys and games are made available to young patients in primary grades. Special attention is given to the enrichment of instructional materials in reading, spelling and the social sciences. Some materials in the social sciences are not suitable for the convalescent child. Size and weight of books must be considered. Many geographies and histories are too heavy. Maps, globes, charts and other supplementary materials are not always practicable for hospital use. Small, bound units recently made available have done a great deal to overcome this difficulty. In the hospitals there are many children who need sight-saving instructional materials. These are now available for use in hospitals.

Hospital officials and teachers believe that the physically handicapped child is benefitted by an occupation which employs his hands as well as his brain. Meeting the patient's mental health needs, which is a function of the hospital school, means that educators must provide for the individual child's capacities and interests—his vocational needs and his academic needs. With a firm belief in this main objective of the hospital school, teachers plan programs in occupational ther-

apy—art, weaving, light woodwork and making toys and airplane models. Especially beneficial for the younger children is calcimine paint work; the use of large brushes necessitates long, sweeping strokes which serve as an excellent antidote for displays of temperament. Sewing and knitting provide valuable training for the girls and at the same time serve a therapeutic purpose. Linoleum block printing has proved to be interesting work for bed patients.

The hospital schools aim to instil in the students the idea that there is a place in society for every one, and that each individual must find his place. The physically disabled child must have a clear knowledge of how much his crippled condition will handicap him vocationally; he must learn to appraise his own limitations and to keep within these limitations. This the hospital school helps him to do.

MAINTAINING MEDICAL COMPETENCY IN WAR

Two projects that are aiding physicians in the armed forces not only to maintain professional competence in matters pertaining to military medicine but also to be able to return to civilian practice at the end of the war armed with the latest knowledge in all fields of medicine, are announced in a recent issue of *The Journal of the American Medical Association.*

By cooperation of the editorial staff of *The Journal of the American Medical Association* with the Committee on Information of the Division of Medical Sciences of the National Research Council and the Divisions of Publications of the United States Army and Navy Medical Departments and the United States Public Health Service, a letter is being prepared every two weeks which is distributed to every officer in these services. Such letters are sent by air mail or by V-letter to various camps and hospitals and are there mimeographed for distribution to the individual officers. In some instances, copy is sent directly to an individual officer.

By special arrangement E. R. Squibb and Sons has planned to distribute to officers in the armed forces a publication called *Medical Journal Abstracts,* prepared by the library staff of this firm.

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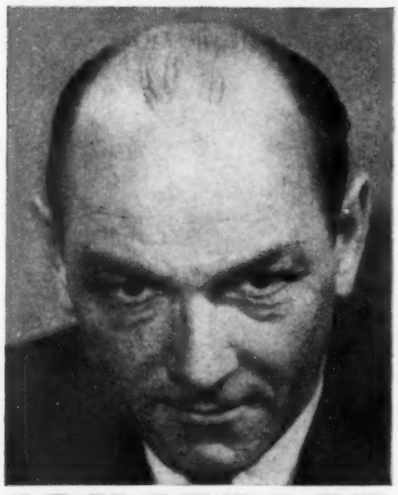

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Gonorrhea

(*Continued from page 278*)

covery of immunization, revolutionized the treatment of gonorrhea. It is interesting to note that the first of the sulfa drugs, sulfanilamide, was discovered by a chemist, Gelmo, in 1908, the year before Ehrlich introduced arsphenamine in the chemotherapy of syphilis. But Gelmo worked in a dye factory, and for a quarter of a century sulfanilamide remained merely an ingredient of a chemical which would color materials red. The chemotherapy of gonorrhea awaited the discovery of German and English medical scientists that sulfanilamide could work miracles with childbed fever, septic sore throat and other infections. In 1937, Dees and Colston became the first to apply sulfanilamide to gonorrhea. The initial results were spectacular. Patients lost their symptoms overnight. Continued study showed that many of them also suffered dangerous toxic reactions, and, although asymptomatic, many others continued to carry the gonococci and spread the disease.

But meanwhile chemists were having a field day with the molecular daisy chain of the sulfonamide group. They discovered sulfa derivatives by the hundred. Sulfapyridine was the next important one. It was more effective than sulfanilamide against pneumonia and gonorrhea, but also had a formidable list of toxic effects. In 1939 Fosbinder and Walter announced sulfathiazole, and it since has been accepted as the safest and most effective treatment for gonorrhea. Sulfadiazine is a newer rival, and some say it is superior, but it as yet has not completely run the gantlet of medical evaluation.

Sulfathiazole will, according to the strictest interpretation the American Neisserian Medical Society can place on the word, *cure* 80 to 90 per cent of acute gonorrhea cases. This means that a handful of white pills taken by mouth over a period of five to ten days, according to the doctor's directions, will eliminate all clinical symptoms and laboratory signs of gonorrhea!

Accepted laboratory methods for the detection of gonococci are two. One is the Gram stain method. Material from the infected area is smeared on a glass slide and stained with violet dye which has an affinity for the gonococci and enables the technician to see the germ under the microscope. A positive "smear" is necessary for the diagnosis of gonorrhea in the male, inasmuch as about one third of urethral discharges result from other causes. The second method is the bacteriologic culture. An agar plate is inoculated with suspected material and incubated for a given period. Bacterial colonies growing on the surface are then studied to determine whether any has the characteristics of gonococci. The culture method is several times more sensitive than the smear, and is hence more useful for diagnosis in the female, where during inactive stages the germ, while present, is difficult to find.

It is commonly said that a positive smear or culture is proof of the presence of gonorrhea, but that a negative test is no proof of its absence. The positive proof depends, however, on the reliability of the laboratory technician, inasmuch as there are a half dozen or so bacteria which closely resemble gonococci.

Unfortunately, blood tests for gonorrhea, such as are used for the mass detection of syphilis, are not yet practical. Laboratory tests on the blood have been devised, but the methods are still in the experimental stage.

A small percentage of gonorrhea patients may harbor the germ for some weeks after their symptoms have disappeared. Several weeks of follow-up tests are necessary to determine this objective. Unlike syphilis, gonorrhea is infectious in all stages, early and late.

Self-medication with sulfathiazole is dangerous to the individual and the public. The drug should be administered under the direction of a physician, because of the possibility of fever, rash, vomiting or kidney damage, and so that the physician may determine when a cure has been attained.

For the 10 to 20 per cent of patients who are treatment resistant there are three additional possibilities of cure. The first is a short rest from medication and then a

second course of chemotherapy. The second is local treatment, which may be of benefit. The third is artificial fever, which is recommended for patients who fail to respond to sulfathiazole and local treatment, or who have a severe eye infection, gonorrheal arthritis, or gonococcic blood poisoning. While of demonstrated effectiveness in all types of gonorrhea, fever therapy is not generally available because of a scarcity of equipment.

"The value of prophylactic measures in the male against gonorrhea stands unchallenged," according to a statement by the Neisserian society's executive committee, which serves in an advisory capacity in the Public Health Service's national program. "Chemical prophylaxis, when used properly and immediately after exposure, is about 90 per cent effective. The greatest safety in preventive measures belongs to mechanical prophylaxis, which has the added value of protecting both parties. The gonococcus cannot survive a good soap lather."

Thus is added one more medical voice to support of soap and water prevention of venereal disease. Chemical prophylactics have been criticized as ineffective under any except military control and mechanical prophylaxis because it involves birth control. The use of soap, however, is not controversial.

Information on the prevention of syphilis and gonorrhea is provided for the layman by the United States Public Health Service in its first educational publicity on prophylactics, a recent pamphlet entitled "It Doesn't Pay."

Gonorrhea, far more than syphilis, is the occupational disease of prostitutes. All women who engage in promiscuous sexual relations may be expected to have it at one time or another. Many are passive carriers of the germ and may infect men without being infected at the time. The quickest way of reducing the number of cases of gonorrhea in any community is to curb its prostitution, both the "house" or "street-walker" professional and the "semipro" of the taverns.

This has been the result wherever local police and health authorities have cooperated with the military and social hygiene leaders who have sought to reduce the venereal disease drag on the armed forces.

Control of venereal disease by controlling prostitution is a difficult method and certainly the most thankless. Informed medical men recognize the necessity of attacking prostitution to reduce venereal disease by reducing the number of contacts with infected persons. To be effective such a program must have the sincere cooperation of the municipal and police authorities as well as civic support.

Most social hygiene leaders confine their attempts to repress prostitution of the commercialized type, admitting that the simple boy-girl relationship is too fundamental for control, even where they desire to guide the individual into sexual abstinence. But where sex is organized on a business basis by racketeers working in syndicates paying off to police and politicians, no good can be found—even by those opposed to moral reform. Any objective investigation discloses that prostitution breeds crime and houses its criminals. It is essentially degrading for all participants.

The old time police philosophy holds that prostitution is a necessary evil—necessary because men are men and nice girls must be protected from them. Therefore, it is reasoned, houses of prostitution should be segregated—the "red light district"—and regulated —regular medical examinations for inmates. However, it has been proved time and again, during and since World War I, that segregation increases the number of contacts between an individual carrier of syphilis or gonorrhea and the male population, thus increasing the probability of spreading the infection. It also has been proved that medical examinations, even in rare instances where they are done carefully, cannot certify that a woman is free from disease at the time, or that she will remain so thirty minutes after examination. Furthermore, there is no method by which the prostitute "can protect her customer," as her defenders contend. She does not know how to take care of herself. The policies of the War and Navy Departments, the Federal Security Agency, and the American Medical Association are that prostitution is an unnecessary evil which, as the safety deposit vault of venereal disease germs, should be repressed as a menace to public health.

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Medical News

OF THE MONTH

Treatment of Shock

Instead of warming a shocked patient, as has been the general custom in the past, he should be allowed to maintain the lowest safe level of temperature, *The Journal of the American Medical Association* declares editorially, asserting that teaching outlines for first aid workers should be modernized at once by modifying those portions dealing with external heat for the alleged prevention or treatment of shock.

"Warming the shock patient has been practiced for centuries without convincing evidence of value," *The Journal* says. "Cooling has not apparently been given a fair trial. Many experimental studies are still unpublished because of laudable caution. The time is now ripe for a presentation of the side of this complicated and controversial subject which favors cold. Certainly external warmth should not be used in treating cases of shock when only the skin is cold but rectal temperature is normal or even above normal. . . ."

A Form of Homesickness

In examining recruits a condition which they term cryptic or hidden nostalgia, a home fixation rather than a home sickness, should be kept in mind, as it is easily confused with simple schizophrenia (split personality) or mental deficiency, Lieut. Comdr. C. L. Wittson, Lieut. Comdr. H. I. Harris and Lieut. W. A. Hunt, Medical Corps, United States Naval Reserve, advise in *War Medicine*. "When present during the training period," they say, "it interferes with efficient performance and may lead to disciplinary difficulties. Insight is easily acquired, however, and a single interview with a psychiatrist usually suffices to return a recruit to efficiency. . . .

"It is not the usual type of nostalgia that we wish to discuss . . . but rather a significant variation which because of its cryptic nature and lack of clear overt symptomatology we have called 'cryptic nostalgia.' Cryptic nostalgia does not have the familiar characteristics of ordinary nostalgia. A man with this disorder is not agitated and depressed. He may appear somewhat apathetic and preoccupied, but in general he gives the impression of accepting his environment and of not being displeased with it. There is no obvious affective disturbance. Finally, he has no insight into his condition and does not realize that something is wrong.

"On the positive side, he can be described as a person who has not as yet severed his ties with home and is completely immersed in thoughts of family and friends. . . . Continual preoccupation with thoughts of home and friends causes an air of abstraction. The subject appears absentminded and vague and is slow in responding. He has trouble in paying attention, finds it hard to concentrate on the task at hand and may fail to carry out his routine duties efficiently. He himself has no understanding of his difficulties and cannot comprehend the reason for his failure to measure up to the standard expected of him. . . ."

In other words, they point out, such a recruit simply is unable to get his mind off home, and he continues to live in the old environment rather than actively merging himself with the new one.

Nutrition and the Military Flier

A regimen of small frequent feedings is recommended for the aviator actively engaged in military operations, Lieut. Howard R. Bierman, Medical Corps, United States Naval Reserve, declares in *War Medicine*. Lieutenant Bierman points out that while nutrition is an important aspect in the problem of maintenance of the physical fitness of the military aviator, available data in the literature concerning the role of nutrition in aviation are meager and confined to a few articles antedating World War II. "There are few occupations which so rapidly expose their personnel to such a variety of hazards and extremes of environment as does aviation," he says.

Referring to the change in environment which occurs when one ascends in the atmosphere and the principles of gas expansion at these altitudes, the author explains that "The effect of these changes on the human body is altered directly or indirectly by the nutritional status of the person ascending, and therefore a thorough understanding of the diet is in order. One need only accompany a pilot on a long flight to appreciate fully the sense of physical, as well as mental, fatigue experienced. The sensation of hunger increases as the duration of the flight lengthens. Climatic conditions and storage, weight and refrigeration of food in the plane are additional problems confronting the aviation-minded nutritionist. . . .

"A high protein diet appears ideal for the aviator. . . . The use of the extra heat-producing action of proteins in maintaining body temperature appears to be a valuable adjunct to the diet of the aviator. . . .

"A high fluid intake daily, of at least 3,000 cc. in moderate weather . . . seems advisable. Cocoa, chocolate drink, hot chocolate, a cereal drink (Postum), lemonade, orangeade, limeade, eggnog and tea are allowable in small quantities. Carbonated beverages need be avoided only if high altitude work is in the offing. . . .

"The exclusion of gas containing and gas forming foods from the diet of the high altitude personnel should be attempted under the supervision of competent authority. . . . The observation that almost any large meal will cause some bloating brings one to favor a regimen of small frequent feedings rather than the conventional breakfast, lunch and dinner. . . ."